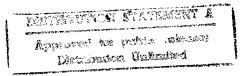
# Water Conservation Study (Water and Energy) Energy Engineering Analysis Program (EEAP) FY94S Fort Knox, Kentucky

Final Report

Volume 1 of 3

CONTRACT #DACA01-94-D-0034 SYSTEMS CORP PROJECT #94013.03 DECEMBER 30, 1994





#### DEPARTMENT OF THE ARMY

CONSTRUCTION ENGINEERING RESEARCH LABORATORIES, CORPS OF ENGINEERS P.O. BOX 9005

CHAMPAIGN, ILLINOIS 61826-9005

REPLY TO ATTENTION OF:

TR-I Library

17 Sep 1997

Based on SOW, these Energy Studies are unclassified/unlimited. Distribution A. Approved for public release.

Marie Wakeffeld, Librarian Engineering

TABLE OF CONTENTS
FY94S WATER CONSERVATION STUDY (WATER AND ENERGY), FT. KNOX, KY

# **VOLUME I**

1.	EXEC	UTIVE SI	UMMARY	1-1		
	1.1	Synops	sis	1-1		
	1.2	Introdu	uction	1-1		
		1.2.1	Scope of V	Vork		
		1.2.2	Organizati	on of the Final Report		
	1.3	Presen	t and Historic	cal Water Consumption 1-3		
	1.4	Energy	Conservation	Opportunities Investigated 1-4		
		1.4.1	ECOs Reco	ommended		
		1.4.2	ECOs Reje	cted		
		1.4.3	ECIP and F	FEMP Projects Developed		
2.	METH	METHODS AND APPROACH 2-				
	2.1	Field Survey 2-1				
		2.1.1	٠,	Water Conservation Opportunities 2-1		
		2.1.2	• • • • • • • • • • • • • • • • • • • •			
			That Were Not Evaluated			
			2.1.2.1	ECO-5 Water Saving Showerheads		
			2.1.2.2	ECO-13 Distribution Waterlines, Motors, 2-3		
				Valves, Leaks, Storage Towers and Tanks,		
				Off Peak and Capacities		
			2.1.2.3	ECO-14 Hospital Process Cooling 2-3		
			2.1.2.4	ECO-15 Vehicle Wash Facilities 2-3		
		2.1.3	Buildings 1	Not Evaluated		
	2.2	Calcula	ations	2-22		
		2.2.1	Baseline W	Vater and Energy Consumption 2-22		
			2.2.1.1	Baseline Water and Energy Consumption 2-22		
		2.2.2	ECO Wate	r and Energy Consumption		
			2.2.2.1	ECO Water and Energy Consumption: 2-23		
				ECO-1 Spring Loaded Faucets		
			2.2.2.2	ECO Water and Energy Consumption 2-23		
				ECO-2 Faucet Aerators		
			2.2.2.3	ECO Water and Energy Consumption: 2-23		
				ECO-2FH Faucet Aerators (Family Housing)		

SYSTEMS ENGINEERING AND MANAGEMENT CORPORATION

PAGE I

# TABLE OF CONTENTS FY94S WATER CONSERVATION STUDY (WATER AND ENERGY), FT. KNOX, KY

		2.2.2.4	ECO Water and Energy Consumption:	2-23
			ECO-3 Flush Valve Retrofits for Water Closets	
		2.2.2.5	ECO Water and Energy Consumption:	2-24
			ECO-3FH Water Closet Replacements	
			(Family Housing)	
		2.2.2.6	ECO Water and Energy Consumption:	2-24
			ECO-4 Flush Valve Retrofits for Urinals	
		2.2.2.7	ECO Water and Energy Consumption:	2-24
			ECO-6 Dining Facilities (Kitchen) Retrofits	
		2.2.2.8	ECO Water and Energy Consumption:	2-24
			ECO-7 Golf Course Irrigation	
		2.2.2.9	ECO Water and Energy Consumption:	2-24
			ECO-8 Post Laundry Retrofits	
		2.2.2.10	ECO Water and Energy Consumption:	2-25
			ECO-9 Water Treatment Plants and Well	
			Fields Motors and Pumps	
		2.2.2.11	ECO Water and Energy Consumption:	2-25
			ECO-10 Manhole Sump Pump Repairs	
			(Heating) Life Cycle Cost Analyses	
		2.2.2.12	ECO Water and Energy Consumption	2-25
			ECO-11 Sensor Controls for Faucets	
		2.2.2.13	ECO Water and Energy Consumption:	2-25
			ECO-12 Water Heater Insulation Blankets	
			(Family Housing)	
		2.2.2.14	ECO Water and Energy Consumption:	2-25
			ECO-16 Cooling Tower Water Treatment	
2.3		•	, 1010	2-25
	2.3.1		•	
	2.3.2		or Controls for Faucets	
	2.3.3		r heater Insulating Blankets	2-26
	2.3.4		ng Tower Water Treatment	2-26
2.4				2-27
	2.4.1		Costs	2-27
	2.4.2	•		2-27
2.5		•		2-27
	2.5.1	Energy and W	/ater Costs	2-28

	2.5.2	Maintenance and Replacement Costs
3.0	ECIP PROJECT 1	: FAMILY HOUSING WATER CONSERVATION 3-1 PHASE I
4.0	ECIP PROJECT 2:	FAMILY HOUSING WATER CONSERVATION 4-1 PHASE II
5.0	ECIP PROJECT 3:	FAMILY HOUSING WATER CONSERVATION 5-1 PHASE III
		VOLUME II
6.0	ECIP PROJECT 4:	WATER CONSERVATION IMPROVEMENTS 6-1 TO 452 BUILDINGS
		VOLUME III
7.0	FEMP PROJECT 1	1: REPLACE STEAM TRAPS IN POST LAUNDRY 7-1
8.0	FEMP PROJECT 2	2: HEATING DISTRIBUTION SYSTEM
9.0	FEMP PROJECT 3	3: GOLF COURSE IRRIGATION WELL SYSTEM 9-1
		APPENDICES
A.	Scope of Work .	A-1
В.	Interim Review C	Comments and Responses

# TABLE OF CONTENTS

FY	94S Water Conservation Study (Water and Energy), Ft. Knox, KY
C. Interim	Review Presentation
D. Reject	ed ECOs 9, 11, 12, 16
	TABLES, FIGURES, AND FORMS
Table 1.1	Summary of Recommended Projects
Table 2.1.1	Energy/Water Conservation Opportunities 2-2
Table 2.1.3.1	Buildings Without Water - No ECOs Evaluated 2-5
Table 2.1.3.2	Buildings Abandoned or Not Occupied - No ECOs Evaluated 2-12
Table 2.1.3.3	Buildings That No Longer Exist - No ECOs Evaluated 2-14
Table 2.1.3.4	Buildings That Are Not Located at Fort Knox - No ECOs Evaluated 2-18
Table 2.1.3.5	Non-Appropriated Fund Facilities - No ECOs Evaluated 2-21
Table 3.1	ECIP FH-1 - Family Housing
Table 3.2	Buildings Modeled by Surveyed Buildings 3-9
Table 4.1	ECIP FH-2 - Family Housing 4-6
Table 4.2	Buildings Modeled by Surveyed Buildings 4-7
Table 5.1	ECIP FH-3 - Family Housing 5-6
Table 5.2	Buildings Modeled By Surveyed Buildings 5-7
Table 6.1	ECIP 4 - Non-Family Housing 6-6
Table 6.2	Buildings Modeled by Surveyed Buildings
Project Reviev	v Comments (Form) 1-2

#### 1.1 **SYNOPSIS**

Systems Corp surveyed and completed water and energy analyses for 650 representative buildings at Fort Knox, categorized as unaccompanied personnel housing, community facilities, administrative facilities, maintenance facilities, training facilities, family housing, post laundry, hospital, heating plants, cooling towers, water treatment plants and water distribution systems. The water and energy conservation opportunities (ECOs) evaluated are listed in Table 1.1.

Cost estimates were prepared using MeansData for Windows Spreadsheets, Version 2.0a. Life cycle cost analyses were performed using the Life Cycle Cost in Design (LCCID) computer program. Project descriptions and DD1391 forms were prepared for four Energy Conservation Investment Program (ECIP) projects. The total of the four projects that were developed represent \$893K in annual savings and a total discounted savings of \$13.4M in the twenty year life of the projects. The simple paybacks average 5.6 years and the savings to investment (SIR) for the four ECIP projects average 2.8. In addition, three Federal Energy Management Program (FEMP) projects were developed. FEMP Project 1 is the replacement of all of the steam traps in the post laundry with a payback of 0.5 years and an SIR of 40. FEMP Project 2 is heating distribution system manhole repairs with a 3.4 year payback and an SIR of 5.5. FEMP Project 3 is the installation of wells to provide irrigation water for Lindsey and Anderson Greens with a 5.1 year payback and an SIR of 2.9.

#### 1.2 INTRODUCTION

Systems Engineering and Management Corporation (Systems/Corp) was contracted by the Louisville District of the United States Army Corps of Engineers in August 1994 to perform a water conservation study of Fort Knox, Kentucky.

#### 1.2.1 Scope of Work

- 1. Evaluate selected water and energy conservation opportunities (ECOs) to determine their water and energy savings potential and economic feasibility.
- 2. Conduct a limited site survey of selected buildings, family housing, heating plants, cooling towers and water distribution systems to insure any methods of water conservation which are practical and have not been evaluated in any previous study have been considered and the results documented.

TABLE 1.1 SUMI	SUMMARY OF RECOMMENDED PROJECTS	COMMEND	ED PROJECT.	5	
PROJECT	INITIAL COST (\$)	ENERGY SAVINGS (MWH/HR)	SIMPLE PAYBACK PERIOD (YRS)	SIR	WATER AND MAINTENANCE SAVINGS (\$)
ECIP-FH1: Family Housing Water Conservation Phase	887,700	374	5.73	2.61	106,700
ECIP-FH2: Family Housing Water Conservation Phase	992,200		5.68	2.61	125,000
ECIP-FH3: Family Housing Water Conservation Phase	980,100		6.63	2.24	006'86
ECIP-4: Water Conservation Improvements to 452 Non-Family Housing Buildings	1,712,500	3,150	4.12	3.68	296,600
FEMP-1: Replacement of Steam Traps in Post Laundry	32,900	6,548	0.46	39.92	2,200
FEMP-2: Heating Distribution System Manhole Repairs	247,200	6,935	3.39	5.48	
FEMP-3: Golf Course Irrigation Well System	36,900	6-	5.13	2.90	7,603

# 1 EXECUTIVE SUMMARY

FY94S WATER CONSERVATION STUDY (WATER AND ENERGY), FT. KNOX, KY

- 3. Determine efficiency of existing systems. Determine the replacement options with the highest SIR.
- 4. Provide complete programming or implementation documentation for all recommended ECOs.
- 5. Prepare a comprehensive report to document the work performed, the results, and the recommendations.

#### 1.2.2 Organization of the Final Report

The submitted material for this report consists of the following:

Volume I: Executive Summary, Methods and Approach, ECIP Project 1, ECIP Project 2,

and ECIP Project 3.

Volume II: ECIP Project 4.

Volume III: FEMP Project 1, FEMP Project 2, FEMP Project 3, and Appendices A-D.

#### 1.3 PRESENT AND HISTORICAL WATER CONSUMPTION

The baseline water and energy consumption and the water and energy conservation opportunities were evaluated using spreadsheets to calculate water and energy consumption. These have been included in Section 3 through 9 of this report.

The energy, water and sewage treatment costs used to calculate the savings for the project are as follows:

Cost/MBtu					
Electric = \$0.02505/KWH or \$25.05/MWH					
Fuel Oil = \$5.05/MBtu or \$17.15/MWH					
Natural Gas = \$3.10/MBtu or \$10.51/MWH					
Cost/Kgal					
Water	= \$0.9409/KGAL or \$0.249/Kliter				
Sewage	= \$0.6292KGAL or \$0.160/Kliter				

#### 1.4 ENERGY CONSERVATION OPPORTUNITIES INVESTIGATED

Systems Corp analyzed sixteen water and energy conservation opportunities (ECOs) at Fort Knox, Kentucky. The analysis was performed utilizing water and energy models developed by Systems Corp and data collected during the field survey of the facilities at Fort Knox. Each ECO was evaluated to determine the potential water and energy savings, dollar savings, implementation costs, simple payback, life cycle cost, and savings to investment ratio (SIR). The sixteen ECOs that were evaluated are as follows:

ECO-1	Spring-Loaded Faucets
ECO-2	Faucet Aerators
ECO-2FH	Faucet Aerators in Family Housing Units
ECO-3	Flush Valves for Water Closets
ECO-3FH	Water Closets in Family Housing Units
ECO-4	Flush Valve Retrofits for Urinals
ECO-5	Water Saving Showerheads
ECO-6	Dining Facility (Kitchen) Retrofits
ECO-7	Golf Course Irrigation
ECO-8	Post Laundry Retrofits
ECO-9	Water Treatment Plants and Well Field Motors and Pumps
ECO-10	Manhole Sump Pump Repairs
ECO-11	Sensor Controls
ECO-12	Water Heater Insulation Blanket
ECO-16	Ozone Treatment of Cooling Tower Water

Systems Corp's water and energy analysis models were used to determine the savings achieved for implementing each ECO in the facilities evaluated. MeansData for Windows Spreadsheets, Version 2.0a cost estimating software was used to estimate the implementation cost of each ECO in each facility evaluated. The U.S. Army Corps of Engineers' Life Cycle Cost in Design, Version 1.0, Level 92, software was used to perform life cycle cost analyses and determine the SIR of each ECO for each facility evaluated.

#### 1.4.1 ECOs Recommended

Systems Corp recommended both ECOs evaluated be implemented, but not in every area surveyed. The following is a list of the ECOs recommended to be implemented by area surveyed. The criteria for recommendation is a favorable simple payback, and savings to investment ratio (SIR).

ECO-1	Spring-Loaded Faucets
ECO-2	Faucet Aerators
ECO-2FH	Faucet Aerators in Family Housing Units
ECO-3	Flush Valves for Water Closets
ECO-3FH	Water Closets in Family Housing Units
ECO-4	Flush Valve Retrofits for Urinals
ECO-6	Dining Facility (Kitchen) Retrofits
ECO-7	Golf Course Irrigation
ECO-8	Post Laundry Retrofits
ECO-10	Manhole Sump Pump Repairs
1.4.2	ECOs Rejected

ECO-9, 11, 12, and 16 were rejected due to the large investment required, the low potential savings, or the existence of a more economically feasible technology. Refer to Appendix D for The Life Cycle Cost Analyses, Cost Estimates and Calculations.

## 1.4.3 ECIP and FEMP Projects Developed

Systems Corp developed four ECIP projects and three FEMP projects (see Table 1.4.3). ECIP Family Housing Project 1 consists of the replacement of water closets in 1354 family housing units with water saving, 6-liters (1.6 gallons)-per-flush water closets, and the installation of faucet aerators in 328 family housing units. ECIP Family Housing Project 2 consists of the replacement of water closets in 1602 family housing units with water saving, 6-liters (1.6 gallons)-per-flush water closets. ECIP Family Housing Project 3 consists of the replacement of water closets in 1268 family housing units with water saving, 6-liters (1.6 gallons)-per-flush water closets. ECIP Project 4 consists of the replacement of flush valves and faucets in 452 buildings with water saving flush valves, metering valve faucets and the installation of faucet aerators. FEMP Project 1 consists of the replacement of all of the steam traps in Building 18, the Post Laundry. FEMP Project 2 consists of the repairs to the heating distribution system manholes for the underground distribution systems serving boiler plants in the following buildings: Buildings 852, 1537, 1725, 1731, 1785, 1797, 2780, 5213, 5943,

# 1 EXECUTIVE SUMMARY

FY94S WATER CONSERVATION STUDY (WATER AND ENERGY), FT. KNOX, KY

6615 and 7203. FEMP Project 3 consists of disconnecting the existing potable water supplies and drilling two wells, one each for the Lindsey and Anderson golf courses.

This section of the report describes the method and approach used by Systems Corp to complete the study. Of primary importance to the successful completion of a project of this magnitude is organization, planning and the ability to quickly document, evaluate and manipulate large amounts of data. This data must then be reduced to useable form which allows for full development of the various projects within the available funding categories. Four Energy Conservation Investment Program (ECIP) projects and three Federal Energy Management Program (FEMP) projects were developed.

#### 2.1 FIELD SURVEY

The field survey as performed by Systems Corp was designed to provide the necessary data required to complete the Scope of Work for this project. It was also designed to provide residual benefits to the installation by providing an organized and readily available source of information which can be used in future years. The information was transmitted in the form of field notes using standardized survey forms.

The survey forms were designed to allow notations of all data which could be utilized (not necessarily required) to calculate the energy savings gained by implementing a specific energy conservation opportunity. These forms contain data obtained from as-built drawings and old energy studies confirmed in the fields as well as data obtained only in the field.

Thorough preparation for the building survey is required to ensure the data required to perform the technical analysis is obtained. The building surveys were performed in a manner which assured the best results. A simple listing of each step of the process best describes our approach to the surveys.

- 1. The list of Water and Energy Conservation Opportunities (ECOs) included in the work scope were reviewed in detail.
- 2. Each ECO was given an identification number which is used consistently throughout this project.
- 3. An expanded description of each ECO was formulated to outline the possible methods for implementation of the ECO.
- 4. Survey forms were developed for each ECO to provide space to enter any data which might possibly be used in performing the engineering and economic analysis of the ECO.
- 5. The building surveys were performed. Measurements of existing flow rates were made.
- 6. The Systems Corp survey team met with the post Energy Officer throughout the survey on an as-needed basis.

METHODS AND APPROACH
FY94S WATER CONSERVATION STUDY (WATER AND ENERGY), FT. KNOX, KY

# 2.1.1 Energy and Water Conservation Opportunities

The Systems Corp's Water and Energy Conservation Team gathered field data and evaluated 18 distinct energy conservation opportunities. The energy conservation opportunities are listed following table:

TABLE 2.1.1 Energy/Water Conservation Opportunities					
ECO - 1	Spring Loaded Faucets				
ECO - 2	Faucet Aerators				
ECO - 2FH	Faucet Aerators				
ECO - 3	Flush Valve Replacements for Water Closets				
ECO - 3FH	Water Closet Replacement				
ECO - 4	Flush Valve Replacements for Urinals				
ECO - 5	Water Saving Showerheads				
ECO - 6	Dining Facilities Kitchen Areas				
ECO - 7	Golf Course Irrigation				
ECO - 8	Post Laundry				
ECO - 9	Waste Treatment Plants and Well Fields, Motors, and Pumps				
ECO - 10	Manhole Sump Pump Repairs				
ECO - 11	Sensor Controls for Faucets				
ECO - 12	Water Heater Insulation Blankets				
ECO - 13	Distribution Waterline Motors, Valves, Leaks, Storage Towers and				
	Tanks, Off Peak, and Capacities				
ECO - 14	Hospital, Process Cooling, i.e. X-ray and CAT scan Equipment, and				
	Leaks				
ECO - 15	Vehicle Wash Facilities				
ECO - 16	Cooling Towers at Hospital				

# 2.1.2 Energy and Water Conservation Opportunities That Were Not Evaluated

Systems Corp's Water and Energy Conservation Team surveyed all facilities before any determination of the applicability of the energy conservation opportunity was made. After completing the field survey, ECO-13, ECO-14, ECO-15 and ECO-16 were discarded.

#### 2.1.2.1 ECO-5 Water Saving Showerheads

During the field survey, it was determined that water saving 2.5 gpm showerheads were already in place. The ECO was discarded.

# 2.1.2.2 ECO-13 Distribution Waterlines, Motors, Valves, Leaks, Storage Towers and Tanks, Off Peak and Capacities

All pump motors were evaluated under ECO-9. No distribution leaks were discovered during the survey. In addition, Fort Knox Directorate of Public Works, Operation and Maintenance Personnel were interviewed to learn of any likely areas where distribution water lines were suspect. The new water storage tank project plans and specifications were reviewed. The post's electrical demand profile and water treatment plant recorder charts were reviewed to determine the impact of water pumps on electric demand charges. Comparison of the data showed that peak water demand did not coincide with peak electrical demand periods. The ECO was discarded after completing these review steps.

## 2.1.2.3 ECO-14 Hospital Process Cooling

ECO-14 Hospital Process Cooling pertained to the use of potable water to perform cooling of X-ray, CAT scan, dialysis or medical equipment and any associated leaks. An extensive survey of Ireland Army Community Hospital was completed with excellent cooperation and assistance from the Hospital staff. No instances were found where potable water was being used to perform process cooling. Since no water saving opportunities relating to process cooling or any associated leaks were found, ECO-14 was eliminated.

#### 2.1.2.4 ECO-15 Vehicle Wash Facilities

ECO-15 Vehicle Wash Facilities pertained to water saving opportunities relating to vehicle washing systems. The vehicle wash facilities are located adjacent to Building 7233 and at the intersection of Wilson Road and Frazier Road. The wash systems were found to be using rain water only which is

# 2 METHODS AND APPROACH

# FY94S WATER CONSERVATION STUDY (WATER AND ENERGY), FT. KNOX, KY

recycled after each use. No water conservation opportunities were found, and ECO-15 was eliminated.

# 2.1.3 Buildings Not Evaluated

The scope of work delineates which energy conservation opportunities are to be evaluated for buildings in each category code. A real property list, sorted by category code, was appended to the scope of work. The following tables list the buildings included in the real property list for which no energy conservation opportunities were evaluated. The title of each table describes the reason that no energy conservation opportunities were evaluated for the buildings in each list.

Table 2.1.3.1 is a listing of all of the buildings that were included in the real property listing, sorted by category codes, that do not have water service.

Table 2.1.3.2 is a listing of all of the buildings that were included in the real property listing, sorted by category codes, that are abandoned or not occupied.

Table 2.1.3.3 is a listing of all of the buildings that were included in the real property listing, sorted by category codes, that no longer exist.

Table 2.1.3.4 is a listing of all the buildings that were included in the real property listing, sorted by category codes, that are not located at Fort Knox.

Table 2.1.3.5 is a listing of all the buildings that were included in the real property listing, sorted by category codes, and are non-appropriated fund facilities (AAFES).

Refer to the following tables:

Table 2.1.3.1 Buildings Without Water - No ECOs Evaluated

Table 2.1.3.2 Buildings Abandoned or Not Occupied - No ECOs Evaluated

Table 2.1.3.3 Buildings That No Longer Exist - No ECOs Evaluated

Table 2.1.3.4 Buildings That Are Not Located at Fort Knox - No ECOs Evaluated

Table 2.1.3.5 Non-Appropriated Fund Facilities - No ECOs Evaluated

TABLE 2.1.3.1 BUILDINGS WITHOUT WATER - NO ECOS EVALUATED

CATEGORY		CATEGORY/DESCRIPTION	AREA (SQ FT)	YEAR
17120	01526	GEN INST BLDG	4078	1958
17120	06286	GEN INST BLDG	1496	1987
17120	06287	GEN INST BLDG	1496	1987
17120	06288	GEN INST BLDG	1496	1987
17120	09332	GEN INST BLDG	1000	1962
17120	09349	GEN INST BLDG	1000	1962
17120	09460	GEN INST BLDG	597	1960
17120	09474	GEN INST BLDG	992	1962
17120	09509	GEN INST BLDG	144	1985
17120	09643	GEN INST BLDG	1038	1977
17120	09745	GEN INST BLDG	578	1986
17120	09746	GEN INST BLDG	578	1986
17120	09747	GEN INST BLDG	578	1985
17120	09748	GEN INST BLDG	578	1986
17120	09749	GEN INST BLDG	578	1986
17120	09760	GEN INST BLDG	800	1988
17120	09761	GEN INST BLDG	800	1988
17122	06035	RG HOUSE	2830	1988
17122	09346	RG HOUSE	180	1965
17122	09355	'RG HOUSE	160	1982
17122	09381	RG HOUSE	75	1987
17122	09382	RG HOUSE	54	1987
17122	09712	RG HOUSE	558	1983
17122	09713	RG HOUSE	558	1983
17122	09715	RG HOUSE	558	1983
17122	09716	RG HOUSE	558	1983
17122	09717	RG HOUSE	366	1983
17122	09718	RG HOUSE	366	1983
17122	09719	RG HOUSE	366	1983
17122	09720	RG HOUSE	366	1983
17122	09722	RG HOUSE	558	1983
17122	09723	RG HOUSE	558	1983
17123	09219	RANGE SPT BLDG	800	1960
17123	09340	RANGE SPT BLDG	1800	1965
17123	09344	RANGE SPT BLDG	1800	1965
17123	09376	RANGE SPT BLDG	108	1985
17123	09377	RANGE SPT BLDG	108	1985
17123	09379	RANGE SPT BLDG	54	1985
17123	09380	RANGE SPT BLDG	108	1985
17123	09384	RANGE SPT BLDG	2165	1987
17123	09463	RANGE SPT BLDG	3200	1970
17123	09609	RANGE SPT BLDG	69	1977
17123	09755	RANGE SPT BLDG	120	1988
17123	09763	RANGE SPT BLDG	120	1988
17130	09175	APPL INST BLDG	800	1983
17139	02387	COVD TRNG AREA	200	1977
17139	02792	COVD TRNG AREA	320	1976
17139	06915	COVD TRNG AREA	1056	1983

TABLE 2.1.3.1 BUILDINGS WITHOUT WATER - NO ECOS EVALUATED

CATEGORY		CATEGORY/DESCRIPTION	AREA (SQ FT)	YEAR
17139	09399	COVD TRNG AREA	613	1984
17139	09462	COVD TRNG AREA	1212	1980
17139	09602	COVD TRNG AREA	840	1977
17139	09610	COVD TRNG AREA	803	1977
17139	09620	COVD TRNG AREA	3648	1977
17139	09623	COVD TRNG AREA	757	1977
17139	09625	COVD TRNG AREA	392	1977
17139	09627	COVD TRNG AREA	757	1977
17139	09631	COVD TRNG AREA	776	1977
17139	09633	COVD TRNG AREA	776	1977
17139	09634	COVD TRNG AREA	840	1977
17139	09637	COVD TRNG AREA	845	1977
17139	09646	COVD TRNG AREA	650	1977
17139	09647	COVD TRNG AREA	€50	1977
17139	09665	COVD TRNG AREA	780	1977
17139	09673	COVD TRNG AREA	574	1977
17139	09759	COVD TRNG AREA	984	1988
17139	09762	COVD TRNG AREA	984	1988
17139	09780	COVD TRNG AREA	992	1988
17139	09781	COVD TRNG AREA	992	1988
17139	09782	COVD TRNG AREA	992	1988
17139	09786	COVD TRNG AREA	992	1988
17170	07106	GAS CHAMBER	1392	1969
17190	09292	OTHER	144	1970
17190	09459	OTHER	64	1970
17190	09502	OTHER	256	1987
17190	09600	OTHER	18	1977
17190	09601	OTHER	69	1977
17190	09603	OTHER	69	1977
17190	09604	OTHER	69	1977
17190	09605	OTHER	69	1977
17190	09607	OTHER	69	1977
17190	09608	OTHER	67	1977
17190	09611	OTHER	69	1977
17190	09612	OTHER	69	1977
17190	09613	OTHER	81	1977
17190	09615	OTHER	81	1977
17190	09616	OTHER	26	1977
17190	09622	OTHER	69	1977
17190	09624	OTHER	69	1977
17190	09626	OTHER	69	1977
17190	09628	OTHER	128	1983
17190	09630	OTHER	69	1977
17190	09632	OTHER	69	1977
17190	09635	OTHER	69	1977
17190	09636	OTHER	69	1977
17190	09638	OTHER	72	1977
17190	09644	OTHER	39	1977

TABLE 2.1.3.1 BUILDINGS WITHOUT WATER - NO ECOS EVALUATED

CATEGORY		CATEGORY/DESCRIPTION	AREA (SQ FT)	YEAR
17190	09645	OTHER	54	1977
17190	09649	OTHER	36	1977
17190	09652	OTHER	26	1977
17190	09653	OTHER	26	1977
17190	09654	OTHER	26	1977
17190	09656	OTHER	64	1977
17190	09659	OTHER	64	1977
17190	09663	OTHER	64	1977
17190	09664	OTHER	49	1977
17190	09670	OTHER	35	1977
17190	09707	OTHER	88	1983
17190	09708	OTHER	558	1983
17190	09709	OTHER	558	1983
17190	09711	OTHER	88	1983
17190	09714	OTHER	88	1983
17190	09721	OTHER	88	1983
17190	09752	OTHER	32	1988
17190	09756	OTHER	114	1983
17190	09766	OTHER	114	1983
17190	09787	OTHER	72	1988
17190	09788	OTHER	72	1988
21420	07339	VEH MNT SH DS	2000	1962
21459	02738	OC&L FAC COV		1989
21459	02739	OC&L FAC COV		1989
21470	02753	OIL STO BLDG	120	1964
21470	02773	OIL STO BLDG	120	1964
21470	02776	OIL STO BLDG	120	1964
21470	02777	OIL STO BLDG	120	1964
21470	02779	OIL STO BLDG	120	1964
21470	02784	OIL STO BLDG	120	1964
21470	02791	OIL STO BLDG	120	1969
21470	02965	OIL STO BLDG	120	1969
21470	02966	OIL STO BLDG	120	1969
21470	06124	OIL STO BLDG	120	1965
21470	06594	OIL STO BLDG	120	1968
21470	06596	OIL STO BLDG	120	1968
72321	02990	DET LATRINE BDG	70	1 <del>96</del> 6
72321	04124	DET LATRINE BDG	138	1964
72321	06528	DET LATRINE BDG	150	1987
72321	07237	DET LATRINE BDG	178	1987
72321	09185	DET LATRINE BDG	72	1979
72321	09204	DET LATRINE BDG	178	1960
72321	09205	DET LATRINE BDG	178	1960
72321	09208	DET LATRINE BDG	178	1961
72321	09224	DET LATRINE BDG	178	1964
72321	09231	DET LATRINE BDG	178	1960
72321	09232	DET LATRINE BDG	178	1960
72321	09233	DET LATRINE BDG	178	1960

TABLE 2.1.3.1 BUILDINGS WITHOUT WATER - NO ECOS EVALUATED

CATEGORY		CATEGORY/DESCRIPTION	AREA (SQ FT)	YEAR
72321	09234	DET LATRINE BDG	178	1961
72321	09235	DET LATRINE BDG	178	1961
72321	09236	DET LATRINE BDG	178	1961
72321	09237	DET LATRINE BDG	167	1966
72321	09239	DET LATRINE BDG	178	1961
72321	09240	DET LATRINE BDG	178	1961
72321	09241	DET LATRINE BDG	178	1961
72321	09242	DET LATRINE BDG	178	1961
72321	09254	DET LATRINE BDG	178	1963
72321	09256	DET LATRINE BDG	178	1963
72321	09258	DET LATRINE BDG	178	1963
72321	09264	DET LATRINE BDG	179	1972
72321	09265	DET LATRINE BDG	178	1961
72321	09270	DET LATRINE BDG	178	1961
72321	09273	DET LATRINE BDG	178	1961
72321	09274	DET LATRINE BDG	178	1961
72321	09275	DET LATRINE BDG	178	1962
72321	09276	DET LATRINE BDG	178	1961
72321	09282	DET LATRINE BDG	178	1961
72321	09284	DET LATRINE BDG	178	1961
72321	09286	DET LATRINE BDG	178	1961
72321	09290	DET LATRINE BDG	178	1961
72321	09302	DET LATRINE BDG	178	1963
72321	09305	DET LATRINE BDG	. 16	1972
72321	09315	DET LATRINE BDG	178	1966
72321	09316	DET LATRINE BDG	178	1963
72321	09317	DET LATRINE BDG	178	1963
72321	09318	DET LATRINE BDG	178	1963
72321	09322	DET LATRINE BDG	178	1963
72321	09323	DET LATRINE BDG	16	1972
72321	09324	DET LATRINE BDG	16	1972
72321	09325	DET LATRINE BDG	178	1963
72321	09328	DET LATRINE BDG	16	1972
72321	09330	DET LATRINE BDG	178	1963
72321	09335	DET LATRINE BDG	178	1966
72321	09342	DET LATRINE BDG	178	1965
72321	09347	DET LATRINE BDG	171	1966
72321	09350	DET LATRINE BDG	178	1969
72321	09351	DET LATRINE BDG	178	1969
72321	09352	DET LATRINE BDG	178	1969
72321	09353	DET LATRINE BDG	178	1969
72321	09358	DET LATRINE BDG	180	1964
72321	09360	DET LATRINE BDG	178	1964
72321	09361	DET LATRINE BDG	16	1978
72321	09362	DET LATRINE BDG	16	1978
72321	09363	DET LATRINE BDG	16	1978
72321	09364	DET LATRINE BDG	16	1978
72321	09365	DET LATRINE BDG	16	1978

TABLE 2.1.3.1 BUILDINGS WITHOUT WATER - NO ECOS EVALUATED

72321         09366         DET LATRINE BDG         16         1978           72321         09367         DET LATRINE BDG         16         1978           72321         09395         DET LATRINE BDG         178         1967           72321         09467         DET LATRINE BDG         192         1970           72321         09471         DET LATRINE BDG         192         1970           72321         09471         DET LATRINE BDG         192         1970           72321         09475         DET LATRINE BDG         192         1970           72321         09476         DET LATRINE BDG         178         1970           72321         09476         DET LATRINE BDG         178         1970           72321         09479         DET LATRINE BDG         178         1970           72321         09479         DET LATRINE BDG         168         1977           72321         09460         DET LATRINE BDG         168         1977           72321         09619         DET LATRINE BDG         168         1977           72321         09621         DET LATRINE BDG         178         1977           72321         09630         DET L	CATEGORY		CATEGORY/DESCRIPTION	AREA (SQ FT)	YEAR
72321         09396         DET LATRINE BDG         176           72321         09366         DET SHOWER BLDG         920         1987           72321         09467         DET LATRINE BDG         192         1970           72321         09471         DET LATRINE BDG         192         1970           72321         09475         DET LATRINE BDG         178         1970           72321         09476         DET LATRINE BDG         178         1970           72321         09476         DET LATRINE BDG         178         1970           72321         09476         DET LATRINE BDG         178         1970           72321         09479         DET LATRINE BDG         178         1970           72321         09606         DET LATRINE BDG         168         1977           72321         09606         DET LATRINE BDG         188         1977           72321         09621         DET LATRINE BDG         187         1977           72321         09661         DET LATRINE BDG         187         1977           72321         09671         DET LATRINE BDG         264         1977           72321         09674         DET LATRINE BDG	72321	09366	DET LATRINE BDG	16	1978
72321         09467         DET LATRINE BDG         192         1970           72321         09471         DET LATRINE BDG         192         1970           72321         09472         DET LATRINE BDG         192         1970           72321         09475         DET LATRINE BDG         178         1970           72321         09476         DET LATRINE BDG         178         1970           72321         09477         DET LATRINE BDG         178         1970           72321         09477         DET LATRINE BDG         178         1970           72321         09479         DET LATRINE BDG         178         1979           72321         09606         DET LATRINE BDG         168         1977           72321         09606         DET LATRINE BDG         168         1977           72321         09601         DET LATRINE BDG         168         1977           72321         09600         DET LATRINE BDG         187         1977           72321         09660         DET LATRINE BDG         187         1977           72321         09671         DET LATRINE BDG         187         1977           72321         09672         DET	72321	09367	DET LATRINE BDG	16	1978
72321         09467         DET LATRINE BDG         192         1970           72321         09471         DET LATRINE BDG         192         1970           72321         09475         DET LATRINE BDG         192         1970           72321         09476         DET LATRINE BDG         178         1970           72321         09476         DET LATRINE BDG         178         1970           72321         09476         DET LATRINE BDG         178         1970           72321         09479         DET LATRINE BDG         178         1970           72321         09479         DET LATRINE BDG         168         1977           72321         09606         DET LATRINE BDG         168         1977           72321         09619         DET LATRINE BDG         168         1977           72321         09621         DET LATRINE BDG         177         1977           72321         09660         DET LATRINE BDG         187         1977           72321         09661         DET LATRINE BDG         187         1977           72321         09674         DET LATRINE BDG         264         1977           72321         09675         DET	72321	09395	DET LATRINE BDG	178	1967
72321         09471         DET LATRINE BDG         192         1970           72321         09472         DET LATRINE BDG         192         1970           72321         09476         DET LATRINE BDG         178         1970           72321         09476         DET LATRINE BDG         178         1970           72321         09479         DET LATRINE BDG         178         1970           72321         09479         DET LATRINE BDG         168         1977           72321         09606         DET LATRINE BDG         168         1977           72321         09619         DET LATRINE BDG         168         1977           72321         09619         DET LATRINE BDG         168         1977           72321         09621         DET LATRINE BDG         168         1977           72321         09660         DET LATRINE BDG         167         1977           72321         09661         DET LATRINE BDG         187         1977           72321         09661         DET LATRINE BDG         187         1977           72321         09674         DET LATRINE BDG         220         1979           72321         09675         DET	72321	09396	DET SHOWER BLDG	920	1987
72321         09472         DET LATRINE BDG         192         1970           72321         09475         DET LATRINE BDG         178         1970           72321         09476         DET LATRINE BDG         178         1970           72321         09479         DET LATRINE BDG         179         1979           72321         09479         DET LATRINE BDG         168         1977           72321         09606         DET LATRINE BDG         168         1977           72321         09601         DET LATRINE BDG         168         1977           72321         09601         DET LATRINE BDG         168         1977           72321         09601         DET LATRINE BDG         187         1977           72321         09661         DET LATRINE BDG         187         1977           72321         09671         DET LATRINE BDG         264         1977           72321         09674         DET LATRINE BDG         264         1977           72321         09675         DET LATRINE BDG         220         1979           72321         09676         DET LATRINE BDG         220         1979           72321         09679         DET	72321	09467	DET LATRINE BDG	192	1970
72321         09476         DET LATRINE BDG         178         1970           72321         09476         DET LATRINE BDG         178         1970           72321         09479         DET LATRINE BDG         179         1979           72321         09409         DET LATRINE BDG         168         1977           72321         09606         DET LATRINE BDG         168         1977           72321         09601         DET LATRINE BDG         168         1977           72321         09621         DET LATRINE BDG         168         1977           72321         09660         DET LATRINE BDG         187         1977           72321         09661         DET LATRINE BDG         187         1977           72321         09661         DET LATRINE BDG         187         1977           72321         09671         DET LATRINE BDG         264         1977           72321         09674         DET LATRINE BDG         179         1985           72321         09676         DET LATRINE BDG         220         1979           72321         09676         DET LATRINE BDG         220         1979           72321         09679         DET	72321	09471	DET LATRINE BDG	192	1970
72321 09476 DET LATRINE BDG 178 1970 72321 09477 DET LATRINE BDG 178 1970 72321 09479 DET LATRINE BDG 178 1979 72321 09606 DET LATRINE BDG 168 1977 72321 09606 DET LATRINE BDG 168 1977 72321 09619 DET LATRINE BDG 168 1977 72321 09621 DET LATRINE BDG 168 1977 72321 09660 DET LATRINE BDG 168 1977 72321 09660 DET LATRINE BDG 187 1977 72321 09661 DET LATRINE BDG 187 1977 72321 09661 DET LATRINE BDG 187 1977 72321 09661 DET LATRINE BDG 187 1977 72321 09674 DET LATRINE BDG 179 1985 72321 09675 DET LATRINE BDG 220 1979 72321 09676 DET LATRINE BDG 220 1979 72321 09676 DET LATRINE BDG 220 1979 72321 09677 DET LATRINE BDG 220 1979 72321 09678 DET LATRINE BDG 220 1979 72321 09679 DET LATRINE BDG 220 1979 72321 09680 DET LATRINE BDG 220 1979 72321 09680 DET LATRINE BDG 220 1979 72321 09680 DET LATRINE BDG 220 1979 72321 09681 DET LATRINE BDG 220 1979 72321 09683 DET LATRINE BDG 220 1979 72321 09683 DET LATRINE BDG 220 1979 72321 09683 DET LATRINE BDG 220 1979 72321 09684 DET LATRINE BDG 220 1979 72321 09685 DET LATRINE BDG 220 1979 72321 09686 DET LATRINE BDG 220 1979 72321 09689 DET LATRINE BDG 220 1979 72321 09689 DET LATRINE BDG 220 1979 72321 09689 DET LATRINE BDG 220 1979 72321 09699 DET LATRINE BDG 220 1979	72321	09472	DET LATRINE BDG	192	1970
72321         09477         DET LATRINE BDG         178         1970           72321         09479         DET LATRINE BDG         179         1979           72321         09606         DET LATRINE BDG         168         1977           72321         09619         DET LATRINE BDG         168         1977           72321         09661         DET LATRINE BDG         187         1977           72321         09661         DET LATRINE BDG         187         1977           72321         09661         DET LATRINE BDG         187         1977           72321         09671         DET LATRINE BDG         264         1977           72321         09674         DET LATRINE BDG         220         1979           72321         09675         DET LATRINE BDG         220         1979           72321         09676         DET LATRINE BDG         220         1979           72321         09677         DET LATRINE BDG         220         1979           72321         09678         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09681         DET	72321	09475	DET LATRINE BDG	178	1970
72321         09479         DET LATRINE BDG         179         1979           72321         09606         DET LATRINE BDG         168         1977           72321         09619         DET LATRINE BDG         168         1977           72321         09621         DET LATRINE BDG         177         1977           72321         09660         DET LATRINE BDG         187         1977           72321         09661         DET LATRINE BDG         284         1977           72321         09671         DET LATRINE BDG         284         1977           72321         09674         DET LATRINE BDG         220         1979           72321         09675         DET LATRINE BDG         220         1979           72321         09676         DET LATRINE BDG         220         1979           72321         09677         DET LATRINE BDG         220         1979           72321         09678         DET LATRINE BDG         220         1979           72321         09680         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09682         DET	72321	09476	DET LATRINE BDG	178	1970
72321         09606         DET LATRINE BDG         168         1977           72321         09619         DET LATRINE BDG         168         1977           72321         09621         DET LATRINE BDG         187         1977           72321         09660         DET LATRINE BDG         187         1977           72321         09661         DET LATRINE BDG         187         1977           72321         09674         DET LATRINE BDG         264         1977           72321         09674         DET LATRINE BDG         264         1977           72321         09676         DET LATRINE BDG         220         1979           72321         09676         DET LATRINE BDG         220         1979           72321         09676         DET LATRINE BDG         220         1979           72321         09678         DET LATRINE BDG         220         1979           72321         09678         DET LATRINE BDG         220         1979           72321         09680         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09682         DET	72321	09477	DET LATRINE BDG	178	1970
72321         09619         DET LATRINE BDG         168         1977           72321         09621         DET LATRINE BDG         177         1977           72321         09660         DET LATRINE BDG         187         1977           72321         09661         DET LATRINE BDG         187         1977           72321         09671         DET LATRINE BDG         264         1977           72321         09674         DET LATRINE BDG         179         1985           72321         09675         DET LATRINE BDG         220         1979           72321         09676         DET LATRINE BDG         220         1979           72321         09676         DET LATRINE BDG         220         1979           72321         09678         DET LATRINE BDG         220         1979           72321         09679         DET LATRINE BDG         220         1979           72321         09680         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09682         DET	72321	09479	DET LATRINE BDG	179	1979
72321         09661         DET LATRINE BDG         177         1977           72321         09660         DET LATRINE BDG         187         1977           72321         09661         DET LATRINE BDG         187         1977           72321         09671         DET LATRINE BDG         264         1977           72321         09674         DET LATRINE BDG         279         1985           72321         09675         DET LATRINE BDG         220         1979           72321         09676         DET LATRINE BDG         220         1979           72321         09677         DET LATRINE BDG         220         1979           72321         09678         DET LATRINE BDG         220         1979           72321         09679         DET LATRINE BDG         220         1979           72321         09680         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09682         DET LATRINE BDG         220         1979           72321         09683         DET LATRINE BDG         220         1979           72321         09684         DET	72321	09606	DET LATRINE BDG	168	1977
72321         09660         DET LATRINE BDG         187         1977           72321         09661         DET LATRINE BDG         187         1977           72321         09671         DET LATRINE BDG         264         1977           72321         09674         DET LATRINE BDG         179         1985           72321         09675         DET LATRINE BDG         220         1979           72321         09676         DET LATRINE BDG         220         1979           72321         09677         DET LATRINE BDG         220         1979           72321         09678         DET LATRINE BDG         220         1979           72321         09679         DET LATRINE BDG         220         1979           72321         09680         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09682         DET LATRINE BDG         220         1979           72321         09683         DET LATRINE BDG         220         1979           72321         09684         DET LATRINE BDG         220         1979           72321         09685         DET	72321	09619	DET LATRINE BDG	168	1977
72321         09661         DET LATRINE BDG         187         1977           72321         09674         DET LATRINE BDG         264         1977           72321         09674         DET LATRINE BDG         179         1985           72321         09675         DET LATRINE BDG         220         1979           72321         09676         DET LATRINE BDG         220         1979           72321         09678         DET LATRINE BDG         220         1979           72321         09678         DET LATRINE BDG         220         1979           72321         09679         DET LATRINE BDG         220         1979           72321         09680         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09682         DET LATRINE BDG         220         1979           72321         09683         DET LATRINE BDG         220         1979           72321         09684         DET LATRINE BDG         220         1979           72321         09685         DET LATRINE BDG         220         1979           72321         09686         DET	72321	09621	DET LATRINE BDG	177	1977
72321         09671         DET LATRINE BDG         264         1977           72321         09674         DET LATRINE BDG         179         1985           72321         09675         DET LATRINE BDG         220         1979           72321         09676         DET LATRINE BDG         220         1979           72321         09677         DET LATRINE BDG         220         1979           72321         09678         DET LATRINE BDG         220         1979           72321         09679         DET LATRINE BDG         220         1979           72321         09680         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09682         DET LATRINE BDG         220         1979           72321         09683         DET LATRINE BDG         220         1979           72321         09684         DET LATRINE BDG         220         1979           72321         09685         DET LATRINE BDG         220         1979           72321         09686         DET	72321	09660	DET LATRINE BDG	187	1977
72321         09674         DET LATRINE BDG         179         1985           72321         09675         DET LATRINE BDG         220         1979           72321         09676         DET LATRINE BDG         220         1979           72321         09677         DET LATRINE BDG         220         1979           72321         09678         DET LATRINE BDG         220         1979           72321         09679         DET LATRINE BDG         220         1979           72321         09680         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09682         DET LATRINE BDG         220         1979           72321         09683         DET LATRINE BDG         220         1979           72321         09684         DET LATRINE BDG         220         1979           72321         09685         DET LATRINE BDG         220         1979           72321         09686         DET LATRINE BDG         220         1979           72321         09687         DET LATRINE BDG         220         1979           72321         09688         DET	72321	09661	DET LATRINE BDG	187	1977
72321         09675         DET LATRINE BDG         220         1979           72321         09676         DET LATRINE BDG         220         1979           72321         09677         DET LATRINE BDG         220         1979           72321         09678         DET LATRINE BDG         220         1979           72321         09679         DET LATRINE BDG         220         1979           72321         09680         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09682         DET LATRINE BDG         220         1979           72321         09683         DET LATRINE BDG         220         1979           72321         09683         DET LATRINE BDG         220         1979           72321         09684         DET LATRINE BDG         220         1979           72321         09685         DET LATRINE BDG         220         1979           72321         09686         DET LATRINE BDG         220         1979           72321         09688         DET LATRINE BDG         220         1979           72321         09689         DET	72321	09671	DET LATRINE BDG	264	1977
72321         09676         DET LATRINE BDG         220         1979           72321         09677         DET LATRINE BDG         220         1979           72321         09678         DET LATRINE BDG         220         1979           72321         09679         DET LATRINE BDG         220         1979           72321         09680         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09682         DET LATRINE BDG         220         1979           72321         09683         DET LATRINE BDG         220         1979           72321         09684         DET LATRINE BDG         220         1979           72321         09685         DET LATRINE BDG         220         1979           72321         09686         DET LATRINE BDG         220         1979           72321         09686         DET LATRINE BDG         220         1979           72321         09688         DET LATRINE BDG         220         1979           72321         09689         DET LATRINE BDG         220         1979           72321         09691         DET	72321	09674	DET LATRINE BDG	179	1985
72321         09678         DET LATRINE BDG         220         1979           72321         09679         DET LATRINE BDG         220         1979           72321         09680         DET LATRINE BDG         220         1979           72321         09680         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09682         DET LATRINE BDG         220         1979           72321         09683         DET LATRINE BDG         220         1979           72321         09684         DET LATRINE BDG         220         1979           72321         09685         DET LATRINE BDG         220         1979           72321         09686         DET LATRINE BDG         220         1979           72321         09686         DET LATRINE BDG         220         1979           72321         09687         DET LATRINE BDG         220         1979           72321         09688         DET LATRINE BDG         220         1979           72321         09690         DET LATRINE BDG         220         1979           72321         09691         DET	72321	09675	DET LATRINE BDG	220	1979
72321         09678         DET LATRINE BDG         220         1979           72321         09679         DET LATRINE BDG         220         1979           72321         09680         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09682         DET LATRINE BDG         220         1979           72321         09683         DET LATRINE BDG         220         1979           72321         09684         DET LATRINE BDG         220         1979           72321         09685         DET LATRINE BDG         220         1979           72321         09686         DET LATRINE BDG         220         1979           72321         09687         DET LATRINE BDG         220         1979           72321         09688         DET LATRINE BDG         220         1979           72321         09689         DET LATRINE BDG         220         1979           72321         09690         DET LATRINE BDG         220         1979           72321         09691         DET LATRINE BDG         220         1979           72321         09692         DET	72321	09676	DET LATRINE BDG	220	1979
72321         09679         DET LATRINE BDG         220         1979           72321         09680         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09682         DET LATRINE BDG         220         1979           72321         09683         DET LATRINE BDG         220         1979           72321         09684         DET LATRINE BDG         220         1979           72321         09685         DET LATRINE BDG         220         1979           72321         09686         DET LATRINE BDG         220         1979           72321         09686         DET LATRINE BDG         220         1979           72321         09687         DET LATRINE BDG         220         1979           72321         09688         DET LATRINE BDG         220         1979           72321         09689         DET LATRINE BDG         220         1979           72321         09690         DET LATRINE BDG         220         1979           72321         09691         DET LATRINE BDG         220         1979           72321         09692         DET	72321	09677	DET LATRINE BDG	220	1979
72321         09680         DET LATRINE BDG         220         1979           72321         09681         DET LATRINE BDG         220         1979           72321         09682         DET LATRINE BDG         220         1979           72321         09683         DET LATRINE BDG         220         1979           72321         09684         DET LATRINE BDG         220         1979           72321         09685         DET LATRINE BDG         220         1979           72321         09686         DET LATRINE BDG         220         1979           72321         09687         DET LATRINE BDG         220         1979           72321         09688         DET LATRINE BDG         220         1979           72321         09689         DET LATRINE BDG         220         1979           72321         09689         DET LATRINE BDG         220         1979           72321         09690         DET LATRINE BDG         220         1979           72321         09691         DET LATRINE BDG         220         1979           72321         09692         DET LATRINE BDG         220         1979           72321         09693         DET	72321	09678	DET LATRINE BDG	220	1979
72321         09681         DET LATRINE BDG         220         1979           72321         09682         DET LATRINE BDG         220         1979           72321         09683         DET LATRINE BDG         220         1979           72321         09684         DET LATRINE BDG         220         1979           72321         09685         DET LATRINE BDG         220         1979           72321         09686         DET LATRINE BDG         220         1979           72321         09687         DET LATRINE BDG         220         1979           72321         09688         DET LATRINE BDG         220         1979           72321         09689         DET LATRINE BDG         220         1979           72321         09689         DET LATRINE BDG         220         1979           72321         09690         DET LATRINE BDG         220         1979           72321         09691         DET LATRINE BDG         220         1979           72321         09692         DET LATRINE BDG         220         1979           72321         09693         DET LATRINE BDG         220         1979           72321         09694         DET	72321	09679	DET LATRINE BDG	220	1979
72321         09682         DET LATRINE BDG         220         1979           72321         09683         DET LATRINE BDG         220         1979           72321         09684         DET LATRINE BDG         220         1979           72321         09685         DET LATRINE BDG         220         1979           72321         09686         DET LATRINE BDG         220         1979           72321         09687         DET LATRINE BDG         220         1979           72321         09688         DET LATRINE BDG         220         1979           72321         09689         DET LATRINE BDG         220         1979           72321         09689         DET LATRINE BDG         220         1979           72321         09690         DET LATRINE BDG         220         1979           72321         09691         DET LATRINE BDG         220         1979           72321         09692         DET LATRINE BDG         220         1979           72321         09693         DET LATRINE BDG         220         1979           72321         09694         DET LATRINE BDG         220         1979           72321         09696         DET	72321	09680	DET LATRINE BDG	220	1979
72321         09683         DET LATRINE BDG         220         1979           72321         09684         DET LATRINE BDG         220         1979           72321         09685         DET LATRINE BDG         220         1979           72321         09686         DET LATRINE BDG         220         1979           72321         09687         DET LATRINE BDG         220         1979           72321         09688         DET LATRINE BDG         220         1979           72321         09689         DET LATRINE BDG         220         1979           72321         09690         DET LATRINE BDG         220         1979           72321         09691         DET LATRINE BDG         220         1979           72321         09691         DET LATRINE BDG         220         1979           72321         09692         DET LATRINE BDG         220         1979           72321         09693         DET LATRINE BDG         220         1979           72321         09694         DET LATRINE BDG         220         1979           72321         09695         DET LATRINE BDG         220         1979           72321         09696         DET	72321	09681	DET LATRINE BDG	220	1979
72321         09684         DET LATRINE BDG         220         1979           72321         09685         DET LATRINE BDG         220         1979           72321         09686         DET LATRINE BDG         220         1979           72321         09687         DET LATRINE BDG         220         1979           72321         09688         DET LATRINE BDG         220         1979           72321         09689         DET LATRINE BDG         220         1979           72321         09690         DET LATRINE BDG         220         1979           72321         09691         DET LATRINE BDG         220         1979           72321         09692         DET LATRINE BDG         220         1979           72321         09693         DET LATRINE BDG         220         1979           72321         09694         DET LATRINE BDG         220         1979           72321         09695         DET LATRINE BDG         220         1979           72321         09696         DET LATRINE BDG         220         1979           72321         09696         DET LATRINE BDG         220         1979           72321         09697         DET	72321	09682	DET LATRINE BDG	220	1979
72321         09685         DET LATRINE BDG         220         1979           72321         09686         DET LATRINE BDG         220         1979           72321         09687         DET LATRINE BDG         220         1979           72321         09688         DET LATRINE BDG         220         1979           72321         09689         DET LATRINE BDG         220         1979           72321         09690         DET LATRINE BDG         220         1979           72321         09691         DET LATRINE BDG         220         1979           72321         09692         DET LATRINE BDG         220         1979           72321         09693         DET LATRINE BDG         220         1979           72321         09693         DET LATRINE BDG         220         1979           72321         09694         DET LATRINE BDG         220         1979           72321         09695         DET LATRINE BDG         220         1979           72321         09696         DET LATRINE BDG         220         1979           72321         09698         DET LATRINE BDG         220         1979           72321         09699         DET	72321	09683	DET LATRINE BDG	220	1979
72321         09686         DET LATRINE BDG         220         1979           72321         09687         DET LATRINE BDG         220         1979           72321         09688         DET LATRINE BDG         220         1979           72321         09689         DET LATRINE BDG         220         1979           72321         09690         DET LATRINE BDG         220         1979           72321         09691         DET LATRINE BDG         220         1979           72321         09692         DET LATRINE BDG         220         1979           72321         09693         DET LATRINE BDG         220         1979           72321         09694         DET LATRINE BDG         220         1979           72321         09695         DET LATRINE BDG         220         1979           72321         09696         DET LATRINE BDG         220         1979           72321         09697         DET LATRINE BDG         220         1979           72321         09698         DET LATRINE BDG         220         1979           72321         09699         DET LATRINE BDG         220         1979           72321         09700         DET	72321	09684	DET LATRINE BDG	220	1979
72321         09687         DET LATRINE BDG         220         1979           72321         09688         DET LATRINE BDG         220         1979           72321         09689         DET LATRINE BDG         220         1979           72321         09690         DET LATRINE BDG         220         1979           72321         09691         DET LATRINE BDG         220         1979           72321         09692         DET LATRINE BDG         220         1979           72321         09693         DET LATRINE BDG         220         1979           72321         09694         DET LATRINE BDG         220         1979           72321         09695         DET LATRINE BDG         220         1979           72321         09696         DET LATRINE BDG         220         1979           72321         09697         DET LATRINE BDG         220         1979           72321         09698         DET LATRINE BDG         220         1979           72321         09699         DET LATRINE BDG         220         1979           72321         09700         DET LATRINE BDG         220         1979           72321         09701         DET	72321	09685	DET LATRINE BDG	220	1979
72321         09688         DET LATRINE BDG         220         1979           72321         09689         DET LATRINE BDG         220         1979           72321         09690         DET LATRINE BDG         220         1979           72321         09691         DET LATRINE BDG         220         1979           72321         09692         DET LATRINE BDG         220         1979           72321         09693         DET LATRINE BDG         220         1979           72321         09694         DET LATRINE BDG         220         1979           72321         09695         DET LATRINE BDG         220         1979           72321         09696         DET LATRINE BDG         220         1979           72321         09697         DET LATRINE BDG         220         1979           72321         09698         DET LATRINE BDG         220         1979           72321         09699         DET LATRINE BDG         220         1979           72321         09700         DET LATRINE BDG         220         1979           72321         09701         DET LATRINE BDG         220         1979           72321         09702         DET	72321	09686	DET LATRINE BDG	220	1979
72321       09689       DET LATRINE BDG       220       1979         72321       09690       DET LATRINE BDG       220       1979         72321       09691       DET LATRINE BDG       220       1979         72321       09692       DET LATRINE BDG       220       1979         72321       09693       DET LATRINE BDG       220       1979         72321       09694       DET LATRINE BDG       220       1979         72321       09695       DET LATRINE BDG       220       1979         72321       09696       DET LATRINE BDG       220       1979         72321       09697       DET LATRINE BDG       220       1979         72321       09698       DET LATRINE BDG       220       1979         72321       09699       DET LATRINE BDG       220       1979         72321       09700       DET LATRINE BDG       220       1979         72321       09701       DET LATRINE BDG       220       1979         72321       09702       DET LATRINE BDG       220       1979         72321       09702       DET LATRINE BDG       220       1979         72321       09703       DET LATR	72321	09687	DET LATRINE BDG	220	1979
72321       09690       DET LATRINE BDG       220       1979         72321       09691       DET LATRINE BDG       220       1979         72321       09692       DET LATRINE BDG       220       1979         72321       09693       DET LATRINE BDG       220       1979         72321       09694       DET LATRINE BDG       220       1979         72321       09695       DET LATRINE BDG       220       1979         72321       09696       DET LATRINE BDG       220       1979         72321       09697       DET LATRINE BDG       220       1979         72321       09698       DET LATRINE BDG       220       1979         72321       09699       DET LATRINE BDG       220       1979         72321       09700       DET LATRINE BDG       220       1979         72321       09701       DET LATRINE BDG       220       1979         72321       09702       DET LATRINE BDG       220       1979         72321       09702       DET LATRINE BDG       220       1979         72321       09703       DET LATRINE BDG       220       1979          72321       09703 <td< td=""><td>72321</td><td>09688</td><td>DET LATRINE BDG</td><td>220</td><td>1979</td></td<>	72321	09688	DET LATRINE BDG	220	1979
72321       09691       DET LATRINE BDG       220       1979         72321       09692       DET LATRINE BDG       220       1979         72321       09693       DET LATRINE BDG       220       1979         72321       09694       DET LATRINE BDG       220       1979         72321       09695       DET LATRINE BDG       220       1979         72321       09696       DET LATRINE BDG       220       1979         72321       09697       DET LATRINE BDG       220       1979         72321       09698       DET LATRINE BDG       220       1979         72321       09699       DET LATRINE BDG       220       1979         72321       09700       DET LATRINE BDG       220       1979         72321       09701       DET LATRINE BDG       220       1979         72321       09702       DET LATRINE BDG       220       1979         72321       09703       DET LATRINE BDG       220       1979         72321       09703       DET LATRINE BDG       220       1979	72321	09689	DET LATRINE BDG	220	1979
72321         09692         DET LATRINE BDG         220         1979           72321         09693         DET LATRINE BDG         220         1979           72321         09694         DET LATRINE BDG         220         1979           72321         09695         DET LATRINE BDG         220         1979           72321         09696         DET LATRINE BDG         220         1979           72321         09697         DET LATRINE BDG         220         1979           72321         09698         DET LATRINE BDG         220         1979           72321         09699         DET LATRINE BDG         220         1979           72321         09700         DET LATRINE BDG         220         1979           72321         09701         DET LATRINE BDG         220         1979           72321         09702         DET LATRINE BDG         220         1979           72321         09702         DET LATRINE BDG         220         1979           72321         09703         DET LATRINE BDG         220         1979           72321         09703         DET LATRINE BDG         220         1979	72321	09690	DET LATRINE BDG	220	1979
72321       09693       DET LATRINE BDG       220       1979         72321       09694       DET LATRINE BDG       220       1979         72321       09695       DET LATRINE BDG       220       1979         72321       09696       DET LATRINE BDG       220       1979         72321       09697       DET LATRINE BDG       220       1979         72321       09698       DET LATRINE BDG       220       1979         72321       09699       DET LATRINE BDG       220       1979         72321       09700       DET LATRINE BDG       220       1979         72321       09701       DET LATRINE BDG       220       1979         72321       09702       DET LATRINE BDG       220       1979         72321       09703       DET LATRINE BDG       220       1979	72321	09691	DET LATRINE BDG	220	1979
72321       09694       DET LATRINE BDG       220       1979         72321       09695       DET LATRINE BDG       220       1979         72321       09696       DET LATRINE BDG       220       1979         72321       09697       DET LATRINE BDG       220       1979         72321       09698       DET LATRINE BDG       220       1979         72321       09699       DET LATRINE BDG       220       1979         72321       09700       DET LATRINE BDG       220       1979         72321       09701       DET LATRINE BDG       220       1979         72321       09702       DET LATRINE BDG       220       1979         72321       09703       DET LATRINE BDG       220       1979	72321	09692	DET LATRINE BDG	220	1979
72321       09695       DET LATRINE BDG       220       1979         72321       09696       DET LATRINE BDG       220       1979         72321       09697       DET LATRINE BDG       220       1979         72321       09698       DET LATRINE BDG       220       1979         72321       09699       DET LATRINE BDG       220       1979         72321       09700       DET LATRINE BDG       220       1979         72321       09701       DET LATRINE BDG       220       1979         72321       09702       DET LATRINE BDG       220       1979         72321       09703       DET LATRINE BDG       220       1979	72321	09693	DET LATRINE BDG	220	1979
72321       09696       DET LATRINE BDG       220       1979         72321       09697       DET LATRINE BDG       220       1979         72321       09698       DET LATRINE BDG       220       1979         72321       09699       DET LATRINE BDG       220       1979         72321       09700       DET LATRINE BDG       220       1979         72321       09701       DET LATRINE BDG       220       1979         72321       09702       DET LATRINE BDG       220       1979         72321       09703       DET LATRINE BDG       220       1979	72321		DET LATRINE BDG		
72321       09697       DET LATRINE BDG       220       1979         72321       09698       DET LATRINE BDG       220       1979         72321       09699       DET LATRINE BDG       220       1979         72321       09700       DET LATRINE BDG       220       1979         72321       09701       DET LATRINE BDG       220       1979         72321       09702       DET LATRINE BDG       220       1979         72321       09703       DET LATRINE BDG       220       1979	72321	09695	DET LATRINE BDG	220	1979
72321     09698     DET LATRINE BDG     220     1979       72321     09699     DET LATRINE BDG     220     1979       72321     09700     DET LATRINE BDG     220     1979       72321     09701     DET LATRINE BDG     220     1979       72321     09702     DET LATRINE BDG     220     1979       72321     09703     DET LATRINE BDG     220     1979	72321	09696	DET LATRINE BDG	220	1979
72321     09699     DET LATRINE BDG     220     1979       72321     09700     DET LATRINE BDG     220     1979       72321     09701     DET LATRINE BDG     220     1979       72321     09702     DET LATRINE BDG     220     1979       72321     09703     DET LATRINE BDG     220     1979					
72321       09700       DET LATRINE BDG       220       1979         72321       09701       DET LATRINE BDG       220       1979         72321       09702       DET LATRINE BDG       220       1979         72321       09703       DET LATRINE BDG       220       1979		09698			
72321       09701       DET LATRINE BDG       220       1979         72321       09702       DET LATRINE BDG       220       1979         72321       09703       DET LATRINE BDG       220       1979					
72321 09702 DET LATRINE BDG 220 1979 72321 09703 DET LATRINE BDG 220 1979			DET LATRINE BDG		
72321 09703 DET LATRINE BDG 220 1979					
72321 09704 DET LATRINE BDG 220 1979					
	72321	09704	DET LATRINE BDG	220	1979

TABLE 2.1.3.1 BUILDINGS WITHOUT WATER - NO ECOS EVALUATED

72321 09706 DET LATRINE BDG 133 1983 72321 09706 DET LATRINE BDG 133 1983 72321 09751 DET LATRINE BDG 180 1988 72321 09757 DET LATRINE BDG 199 1988 72321 09758 DET LATRINE BDG 199 1988 72321 09764 DET LATRINE BDG 199 1988 72321 09765 DET LATRINE BDG 199 1988 72321 09765 DET LATRINE BDG 199 1988 72321 09765 DET LATRINE BDG 199 1988 72320 00658 DET LATRINE BDG 199 1988 72350 01008 DETACH GARAGES 780 1980 73055 00128 WAITING SHELTER 62 1981 73055 01305 WAITING SHELTER 62 1981 73055 01305 WAITING SHELTER 62 1981 73055 01502 WAITING SHELTER 62 1981 73055 02440 WAITING SHELTER 62 1981 73055 02652 WAITING SHELTER 62 1981 73055 02652 WAITING SHELTER 62 1981 73055 02652 WAITING SHELTER 62 1981 73055 04025 WAITING SHELTER 62 1981 73055 04120 WAITING SHELTER 102 1956 73055 04112 WAITING SHELTER 102 1956 73055 04120 WAITING SHELTER 102 1956 73055 04120 WAITING SHELTER 102 1956 73055 04120 WAITING SHELTER 102 1956 73055 04122 WAITING SHELTER 120 1956 73055 04126 WAITING SHELTER 120 1966 73055 04126 WAITING SHELTER 120 1966 73055 05914 WAITING SHELTER 120 1966 73055 05914 WAITING SHELTER 120 1966 73055 05945 WAITING SHELTER 120 1966 73055 07951 WAITING SHELTER 120 1966 73055 07951 WAITING SHELTER 137 1966 73055 07950 WAITING SHELTER 148 1985 73055 09506 WAITING SHELTER 48 1985 73055 09507 WAITING SHELTER 48 1985 73055 09507 WAITING SHE	CATEGORY		CATEGORY/DESCRIPTION	AREA (SQ FT)	YEAR
72321 09751 DET LATRINE BDG 180 1988 72321 09756 DET LATRINE BDG 199 1988 72321 09764 DET LATRINE BDG 199 1988 72321 09765 DET LATRINE BDG 199 1988 72321 09765 DET LATRINE BDG 199 1988 72321 09765 DET LATRINE BDG 199 1988 72320 00658 DET LATRINE BDG 199 1988 72350 00658 DET LATRINE BDG 199 1988 72350 01008 DETACH GARAGES 780 1980 72350 01008 DETACH GARAGES 2131 1941 73055 00128 WAITING SHELTER 62 1981 73055 01395 WAITING SHELTER 62 1981 73055 01395 WAITING SHELTER 62 1981 73055 01502 WAITING SHELTER 62 1981 73055 02440 WAITING SHELTER 62 1981 73055 02440 WAITING SHELTER 62 1981 73055 02652 WAITING SHELTER 62 1981 73055 02662 WAITING SHELTER 62 1981 73055 02662 WAITING SHELTER 62 1981 73055 04025 WAITING SHELTER 120 1956 73055 04122 WAITING SHELTER 120 1956 73055 04123 WAITING SHELTER 120 1956 73055 04124 WAITING SHELTER 120 1956 73055 04125 WAITING SHELTER 120 1956 73055 04126 WAITING SHELTER 120 1956 73055 04126 WAITING SHELTER 120 1956 73055 04126 WAITING SHELTER 120 1966 73055 05914 WAITING SHELTER 120 1966 73055 06516 WAITING SHELTER 120 1966 73055 07343 WAITING SHELTER 120 1966 73055 07343 WAITING SHELTER 120 1966 73055 07343 WAITING SHELTER 137 1966 73055 07366 WAITING SHELTER 137 1966 73055 07950 WAITING SHELTER 148 1985 73055 09503 WAITING SHELTER 148 1985 73055 09506 WAITING SHELTER 148 1985 73057 09772 O4770 PO BRANCH 859 73057 07712 OTHER 0 1989 74021 04710 HOLDET 04460 1973 74025 01	72321	09705	DET LATRINE BDG	133	1983
7:321 09757 DET LATRINE BDG 199 1988 7:3221 09758 DET LATRINE BDG 199 1988 7:3221 09756 DET LATRINE BDG 199 1988 7:3221 09755 DET LATRINE BDG 199 1988 7:3250 00858 DET LATRINE BDG 199 1988 7:2350 00858 DET LATRINE BDG 199 1980 7:2350 00858 DET LATRINE BDG 199 1980 7:2350 01008 DETACH GARAGES 780 1980 7:2350 01008 DETACH GARAGES 2131 1941 7:3055 01305 WAITING SHELTER 62 1981 7:3055 01305 WAITING SHELTER 62 1981 7:3055 01305 WAITING SHELTER 62 1981 7:3055 01502 WAITING SHELTER 62 1981 7:3055 02652 WAITING SHELTER 62 1981 7:3055 02652 WAITING SHELTER 62 1981 7:3055 02652 WAITING SHELTER 62 1981 7:3055 04121 WAITING SHELTER 62 1981 7:3055 04122 WAITING SHELTER 62 1986 7:3055 04112 WAITING SHELTER 120 1956 7:3055 04112 WAITING SHELTER 120 1956 7:3055 04112 WAITING SHELTER 120 1956 7:3055 04120 WAITING SHELTER 120 1956 7:3055 04122 WAITING SHELTER 120 1956 7:3055 04123 WAITING SHELTER 120 1956 7:3055 04126 WAITING SHELTER 120 1966 7:3055 05914 WAITING SHELTER 120 1966 7:3055 05915 WAITING SHELTER 120 1966 7:3055 05916 WAITING SHELTER 137 1966 7:3055 05916 WAITING SHELTER 137 1966 7:3055 05916 WAITING SHELTER 137 1966 7:3055 05950 WAITING SHELTER 137 1966 7:3055 05950 WAITING SHELTER 137 1966 7:3055 07951 WAITING SHELTER 137 1966 7:3055 09503 WAITING SHELTER 148 1985 7:3055 09504 WAITING SHELTER 148 1985 7:3055 09505 WAITING SHELTER 148 1985 7:3055 09506 WAITING SHELTER 148 1985 7:305	72321	09706	DET LATRINE BDG	133	1983
72321         09768         DET LATRINE BDG         199         1988           72321         09764         DET LATRINE BDG         199         1988           72321         09765         DET LATRINE BDG         199         1988           72350         00858         DETACH GARAGES         780         1980           72350         01008         DETACH GARAGES         2131         1941           73055         01305         WAITING SHELTER         62         1981           73055         01305         WAITING SHELTER         62         1981           73055         01305         WAITING SHELTER         62         1981           73055         01502         WAITING SHELTER         62         1981           73055         01502         WAITING SHELTER         62         1981           73055         02440         WAITING SHELTER         62         1981           73055         02652         WAITING SHELTER         62         1981           73055         02813         WAITING SHELTER         62         1981           73055         04122         WAITING SHELTER         120         1956           73055         04122         WAITING SHEL	72321	09751	DET LATRINE BDG	180	1988
72321         09764         DET LATRINE BDG         199         1988           72321         09765         DET LATRINE BDG         199         1988           72350         00858         DETACH GARAGES         780         1980           72350         01008         DETACH GARAGES         780         1980           73055         01008         DETACH GARAGES         2131         1941           73055         01305         WAITING SHELTER         62         1981           73055         01381         WAITING SHELTER         62         1981           73055         01361         WAITING SHELTER         62         1981           73055         02440         WAITING SHELTER         62         1981           73055         02652         WAITING SHELTER         62         1981           73055         02652         WAITING SHELTER         62         1981           73055         04025         WAITING SHELTER         120         1956           73055         04121         WAITING SHELTER         120         1956           73055         04122         WAITING SHELTER         120         1956           73055         04123         WAITING SHE	72321	09757	DET LATRINE BDG	199	1988
72321         09765         DET LATRINE BDG         199         1988           72350         00858         DETACH GARAGES         780         1980           72350         01008         DETACH GARAGES         780         1980           73055         00128         WAITING SHELTER         62         1981           73055         01305         WAITING SHELTER         62         1981           73055         01381         WAITING SHELTER         62         1981           73055         01502         WAITING SHELTER         62         1981           73055         02400         WAITING SHELTER         62         1981           73055         02400         WAITING SHELTER         62         1981           73055         02652         WAITING SHELTER         60         1963           73055         02652         WAITING SHELTER         362         1936           73055         02652         WAITING SHELTER         362         1936           73055         04025         WAITING SHELTER         362         1936           73055         04122         WAITING SHELTER         120         1956           73055         04122         WAITING SHEL	72321	09758	DET LATRINE BDG	199	1988
72350         00858         DETACH GARAGES         780         1980           72350         01008         DETACH GARAGES         2131         1941           73055         0128         WAITING SHELTER         62         1981           73055         01305         WAITING SHELTER         62         1981           73055         01381         WAITING SHELTER         62         1981           73055         01502         WAITING SHELTER         62         1981           73055         02440         WAITING SHELTER         62         1981           73055         02652         WAITING SHELTER         62         1981           73055         02652         WAITING SHELTER         60         1963           73055         04025         WAITING SHELTER         120         1956           73055         04025         WAITING SHELTER         120         1956           73055         04122         WAITING SHEL	72321	09764	DET LATRINE BDG	199	1988
72350 01008 DETACH GARAGES 2131 1941 73055 00128 WAITING SHELTER 62 1981 73055 01305 WAITING SHELTER 62 1981 73055 01381 WAITING SHELTER 62 1981 73055 01502 WAITING SHELTER 62 1981 73055 02440 WAITING SHELTER 62 1981 73055 02440 WAITING SHELTER 62 1981 73055 02652 WAITING SHELTER 62 1981 73055 02652 WAITING SHELTER 62 1981 73055 02652 WAITING SHELTER 62 1981 73055 02613 WAITING SHELTER 60 1963 73055 04025 WAITING SHELTER 362 1936 73055 04120 WAITING SHELTER 120 1956 73055 04120 WAITING SHELTER 120 1956 73055 04122 WAITING SHELTER 120 1956 73055 04122 WAITING SHELTER 120 1956 73055 04122 WAITING SHELTER 120 1966 73055 04123 WAITING SHELTER 120 1966 73055 04126 WAITING SHELTER 120 1966 73055 04126 WAITING SHELTER 120 1966 73055 04126 WAITING SHELTER 120 1966 73055 05945 WAITING SHELTER 120 1966 73055 05945 WAITING SHELTER 62 1981 73055 06561 WAITING SHELTER 62 1981 73055 06651 WAITING SHELTER 62 1981 73055 06766 WAITING SHELTER 62 1981 73055 07945 WAITING SHELTER 62 1981 73055 07950 WAITING SHELTER 137 1966 73055 07950 WAITING SHELTER 148 1985 73055 09505 WAITING SHELTER 148 1985 73055 09505 WAITING SHELTER 148 1985 73055 09505 WAITING SHELTER 48 1985 73055 09506 WAITING SHELTER 48 1985 73055 09507 WAITING SHELTER 48 1985 73055 09508 WAITING SHELTER 48 1985 73055 09509 WAITING SHELTER 48 1985 73055 09508 WAITING SHELTER 48 1985 73055 09509 WAITING SHELTER 48 1985 73055 09508 WAITING SHELTER 48 1985 73055 095	72321	09765	DET LATRINE BDG	199	1988
73055 00128 WAITING SHELTER 62 1981 73055 01305 WAITING SHELTER 62 1981 73055 01381 WAITING SHELTER 62 1981 73055 01502 WAITING SHELTER 62 1981 73055 02440 WAITING SHELTER 62 1981 73055 02440 WAITING SHELTER 62 1981 73055 02440 WAITING SHELTER 62 1981 73055 02652 WAITING SHELTER 62 1981 73055 02652 WAITING SHELTER 60 1963 73055 04025 WAITING SHELTER 362 1936 73055 04112 WAITING SHELTER 120 1956 73055 04112 WAITING SHELTER 120 1956 73055 04120 WAITING SHELTER 120 1956 73055 04122 WAITING SHELTER 120 1956 73055 04123 WAITING SHELTER 120 1956 73055 04123 WAITING SHELTER 120 1966 73055 04126 WAITING SHELTER 120 1966 73055 04126 WAITING SHELTER 120 1966 73055 05914 WAITING SHELTER 120 1966 73055 05914 WAITING SHELTER 120 1966 73055 05914 WAITING SHELTER 62 1981 73055 05945 WAITING SHELTER 62 1981 73055 06661 WAITING SHELTER 62 1981 73055 06766 WAITING SHELTER 62 1981 73055 07343 WAITING SHELTER 62 1981 73055 07343 WAITING SHELTER 62 1981 73055 07950 WAITING SHELTER 62 1981 73055 07950 WAITING SHELTER 61 137 1966 73055 07950 WAITING SHELTER 61 137 1966 73055 07951 WAITING SHELTER 61 137 1966 73055 07952 WAITING SHELTER 137 1966 73055 07952 WAITING SHELTER 137 1966 73055 09503 WAITING SHELTER 137 1966 73055 09504 WAITING SHELTER 137 1966 73055 09505 WAITING SHELTER 137 1966 73055 09506 WAITING SHELTER 148 1985 73055 09507 WAITING SHELTER 148 1985 73055 09506 WAITIN	72350	00858	DETACH GARAGES	780	1980
73055 01305 WAITING SHELTER 62 1981 73055 01381 WAITING SHELTER 62 1981 73055 01502 WAITING SHELTER 62 1981 73055 02440 WAITING SHELTER 62 1981 73055 02662 WAITING SHELTER 62 1981 73055 02652 WAITING SHELTER 62 1981 73055 02652 WAITING SHELTER 60 1963 73055 02813 WAITING SHELTER 60 1963 73055 04025 WAITING SHELTER 120 1956 73055 04112 WAITING SHELTER 120 1956 73055 04120 WAITING SHELTER 120 1956 73055 04122 WAITING SHELTER 120 1956 73055 04123 WAITING SHELTER 120 1956 73055 04123 WAITING SHELTER 120 1956 73055 04126 WAITING SHELTER 120 1966 73055 05914 WAITING SHELTER 120 1966 73055 05914 WAITING SHELTER 62 1981 73055 05945 WAITING SHELTER 62 1981 73055 06651 WAITING SHELTER 62 1981 73055 06651 WAITING SHELTER 62 1981 73055 06757 WAITING SHELTER 62 1981 73055 06757 WAITING SHELTER 62 1981 73055 07950 WAITING SHELTER 62 1981 73055 07950 WAITING SHELTER 61 137 1966 73055 07950 WAITING SHELTER 137 1966 73055 07951 WAITING SHELTER 137 1966 73055 07952 WAITING SHELTER 137 1966 73055 07952 WAITING SHELTER 137 1966 73055 09503 WAITING SHELTER 137 1966 73055 09504 WAITING SHELTER 137 1966 73055 09505 WAITING SHELTER 180 1985 73055 09506 WAITING SHELTER 48 1985 73055 09507 WAITING SHELTER 48 1985 73055 09506 WAITING SHELTER 48 1985 73055 09506 WAITING SHELTER 48 1985 73055 09507 WAITING SHELTER 48 1985 73055 09506 WAITING SHELTER 48 1985 73055 09507 WAITING SHELTER 48 1985 73055 09506 WAITING SHELTER 48 1985 73055 09507 WAITING SHELTER 48 1985 73055 09506 WAITING SHELTER 48 1985 73055 09506 WAITING SHELTER 48 1985 73055 09507 WAITING SHELTER 48 1985 73055 09506 WAITING SHELTER 48 1985 73055 09507 WAITING SHELTER 48 1985 73055 09508 WAITING SHELTER 48 1985 73050	72350	01008	DETACH GARAGES	2131	1941
73055 01381 WAITING SHELTER 62 1981 73055 01502 WAITING SHELTER 62 1981 73055 02440 WAITING SHELTER 62 1981 73055 02652 WAITING SHELTER 62 1981 73055 02652 WAITING SHELTER 62 1981 73055 02813 WAITING SHELTER 60 1963 73055 04025 WAITING SHELTER 60 1963 73055 04025 WAITING SHELTER 120 1956 73055 04112 WAITING SHELTER 120 1956 73055 04120 WAITING SHELTER 120 1956 73055 04122 WAITING SHELTER 120 1966 73055 04125 WAITING SHELTER 120 1966 73055 04126 WAITING SHELTER 120 1966 73055 05914 WAITING SHELTER 120 1966 73055 05914 WAITING SHELTER 120 1966 73055 05914 WAITING SHELTER 120 1966 73055 05915 WAITING SHELTER 120 1966 73055 06661 WAITING SHELTER 62 1981 73055 06661 WAITING SHELTER 62 1981 73055 06666 WAITING SHELTER 62 1981 73055 07343 WAITING SHELTER 62 1981 73055 07950 WAITING SHELTER 60 1963 73055 07950 WAITING SHELTER 60 1963 73055 07951 WAITING SHELTER 60 1963 73055 07951 WAITING SHELTER 137 1966 73055 07952 WAITING SHELTER 137 1966 73055 07952 WAITING SHELTER 137 1966 73055 09503 WAITING SHELTER 137 1966 73055 09503 WAITING SHELTER 137 1966 73055 09503 WAITING SHELTER 148 1985 73055 09504 WAITING SHELTER 148 1985 73055 09505 WAITING SHELTER 148 1985 73055 09506 WAITING SHELTER 48 1985 73055 09507 WAITING SHELTER 48 1985 73055 09506 WAITING SHELTER 48 1985 73055 09506 WAITING SHELTER 48 1985 73055 09507 WAITING SHELTER 48 1985 73055 09506 WAITING SHELTER 48 1985 73055 09507 WAITING SHELTER 48 1985 73055 09506 WAITING SHELTER 48 1985 73055 09506 WAITING SHELTER 48 1985 73055 09507 WAITING SHELTER 48 1985 73055 09506 WAITING SHELTER 48 1985 73055 095	73055	00128	WAITING SHELTER	62	1981
73055         01502         WAITING SHELTER         62         1981           73055         02440         WAITING SHELTER         62         1981           73055         02652         WAITING SHELTER         62         1981           73055         02613         WAITING SHELTER         60         1963           73055         04025         WAITING SHELTER         362         1936           73055         04120         WAITING SHELTER         120         1956           73055         04122         WAITING SHELTER         120         1956           73055         04122         WAITING SHELTER         120         1956           73055         04122         WAITING SHELTER         120         1956           73055         04123         WAITING SHELTER         120         1966           73055         04125         WAITING SHELTER         120         1966           73055         04126         WAITING SHELTER         120         1966           73055         04126         WAITING SHELTER         62         1981           73055         05914         WAITING SHELTER         62         1981           73055         05945         WAITING S	73055	01305	WAITING SHELTER	62	1981
73055         02440         WAITING SHELTER         62         1981           73055         02652         WAITING SHELTER         62         1981           73055         02813         WAITING SHELTER         60         1963           73055         04025         WAITING SHELTER         362         1936           73055         04112         WAITING SHELTER         120         1956           73055         04120         WAITING SHELTER         120         1956           73055         04122         WAITING SHELTER         120         1956           73055         04123         WAITING SHELTER         120         1956           73055         04123         WAITING SHELTER         120         1966           73055         04126         WAITING SHELTER         120         1966           73055         04126         WAITING SHELTER         120         1966           73055         04126         WAITING SHELTER         62         1981           73055         05945         WAITING SHELTER         62         1981           73055         06661         WAITING SHELTER         62         1981           73055         06766         WAITING S	73055	01381	WAITING SHELTER	62	1981
73055 02652 WAITING SHELTER 62 1981 73055 02813 WAITING SHELTER 60 1963 73055 04025 WAITING SHELTER 362 1936 73055 04112 WAITING SHELTER 120 1956 73055 04112 WAITING SHELTER 120 1956 73055 04120 WAITING SHELTER 120 1956 73055 04122 WAITING SHELTER 120 1956 73055 04123 WAITING SHELTER 120 1966 73055 04125 WAITING SHELTER 120 1966 73055 04126 WAITING SHELTER 120 1966 73055 05914 WAITING SHELTER 120 1966 73055 05914 WAITING SHELTER 62 1981 73055 05945 WAITING SHELTER 62 1981 73055 06661 WAITING SHELTER 62 1981 73055 06766 WAITING SHELTER 62 1981 73055 06766 WAITING SHELTER 62 1981 73055 07950 WAITING SHELTER 180 1960 73055 07950 WAITING SHELTER 137 1966 73055 07950 WAITING SHELTER 137 1966 73055 07952 WAITING SHELTER 137 1966 73055 09504 WAITING SHELTER 137 1966 73055 09505 WAITING SHELTER 137 1966 73055 09506 WAITING SHELTER 148 1985 73055 09506 WAITING SHELTER 48 1985	73055	01502	WAITING SHELTER	62	1981
73055         02813         WAITING SHELTER         60         1963           73055         04025         WAITING SHELTER         362         1936           73055         04112         WAITING SHELTER         120         1956           73055         04120         WAITING SHELTER         120         1956           73055         04122         WAITING SHELTER         120         1956           73055         04123         WAITING SHELTER         120         1966           73055         04125         WAITING SHELTER         120         1966           73055         04126         WAITING SHELTER         120         1966           73055         04126         WAITING SHELTER         62         1981           73055         05914         WAITING SHELTER         62         1981           73055         05945         WAITING SHELTER         62         1981           73055         06651         WAITING SHELTER         62         1981           73055         06766         WAITING SHELTER         62         1981           73055         06766         WAITING SHELTER         137         1966           73055         07950         WAITING S	73055	02440	WAITING SHELTER	62	1981
73055         04025         WAITING SHELTER         362         1936           73055         04112         WAITING SHELTER         120         1956           73055         04120         WAITING SHELTER         120         1956           73055         04122         WAITING SHELTER         120         1956           73055         04123         WAITING SHELTER         144         1970           73055         04126         WAITING SHELTER         120         1966           73055         04126         WAITING SHELTER         120         1966           73055         05914         WAITING SHELTER         62         1981           73055         05945         WAITING SHELTER         62         1981           73055         05945         WAITING SHELTER         62         1981           73055         06651         WAITING SHELTER         62         1981           73055         06766         WAITING SHELTER         62         1981           73055         07950         WAITING SHELTER         137         1966           73055         07950         WAITING SHELTER         137         1966           73055         07951         WAITING	73055	02652	WAITING SHELTER	62	1981
73055         04112         WAITING SHELTER         120         1956           73055         04120         WAITING SHELTER         120         1956           73055         04122         WAITING SHELTER         120         1956           73055         04123         WAITING SHELTER         144         1970           73055         04125         WAITING SHELTER         120         1966           73055         04126         WAITING SHELTER         62         1981           73055         05914         WAITING SHELTER         62         1981           73055         05945         WAITING SHELTER         62         1981           73055         06651         WAITING SHELTER         62         1981           73055         06651         WAITING SHELTER         62         1981           73055         06651         WAITING SHELTER         62         1981           73055         06757         WAITING SHELTER         180         1960           73055         07343         WAITING SHELTER         180         1960           73055         07950         WAITING SHELTER         137         1966           73055         07951         WAITING S	73055	02813	WAITING SHELTER	60	1963
73055         04120         WAITING SHELTER         120         1956           73055         04122         WAITING SHELTER         120         1956           73055         04123         WAITING SHELTER         144         1970           73055         04125         WAITING SHELTER         120         1966           73055         04126         WAITING SHELTER         120         1966           73055         05914         WAITING SHELTER         62         1981           73055         05945         WAITING SHELTER         62         1981           73055         06651         WAITING SHELTER         62         1981           73055         06651         WAITING SHELTER         62         1981           73055         06757         WAITING SHELTER         62         1981           73055         06766         WAITING SHELTER         180         1960           73055         07343         WAITING SHELTER         137         1966           73055         07950         WAITING SHELTER         137         1966           73055         07951         WAITING SHELTER         137         1966           73055         07952         WAITING	73055	04025	WAITING SHELTER	362	1936
73055         04122         WAITING SHELTER         120         1956           73055         04123         WAITING SHELTER         144         1970           73055         04125         WAITING SHELTER         120         1966           73055         04126         WAITING SHELTER         120         1966           73055         05914         WAITING SHELTER         62         1981           73055         05945         WAITING SHELTER         62         1981           73055         06651         WAITING SHELTER         62         1981           73055         06757         WAITING SHELTER         62         1981           73055         06766         WAITING SHELTER         180         1960           73055         07950         WAITING SHELTER         137         1966           73055         07950         WAITING SHELTER         137         1966           73055         07951         WAITING SHELTER         137         1966           73055         07952         WAITING SHELTER         137         1966           73055         09182         WAITING SHELTER         192         1963           73055         09249         WAITING	73055	04112	WAITING SHELTER	120	1956
73055         04123         WAITING SHELTER         144         1970           73055         04125         WAITING SHELTER         120         1966           73055         04126         WAITING SHELTER         120         1966           73055         05914         WAITING SHELTER         62         1981           73055         05945         WAITING SHELTER         62         1981           73055         06651         WAITING SHELTER         62         1981           73055         06651         WAITING SHELTER         62         1981           73055         06766         WAITING SHELTER         62         1981           73055         06766         WAITING SHELTER         180         1960           73055         07343         WAITING SHELTER         137         1966           73055         07950         WAITING SHELTER         137         1966           73055         07951         WAITING SHELTER         137         1966           73055         07952         WAITING SHELTER         137         1966           73055         09182         WAITING SHELTER         192         1963           73055         09503         WAITING	73055	04120	WAITING SHELTER	120	1956
73055         04125         WAITING SHELTER         120         1966           73055         04126         WAITING SHELTER         120         1966           73055         05914         WAITING SHELTER         62         1981           73055         05945         WAITING SHELTER         62         1981           73055         06651         WAITING SHELTER         62         1981           73055         06757         WAITING SHELTER         62         1981           73055         06766         WAITING SHELTER         180         1960           73055         07343         WAITING SHELTER         137         1966           73055         07950         WAITING SHELTER         137         1966           73055         07951         WAITING SHELTER         137         1966           73055         07952         WAITING SHELTER         137         1966           73055         09182         WAITING SHELTER         192         1963           73055         09182         WAITING SHELTER         192         1963           73055         09249         WAITING SHELTER         48         1985           73055         09503         WAITING	73055	04122	WAITING SHELTER	120	1956
73055         04126         WAITING SHELTER         120         1966           73055         05914         WAITING SHELTER         62         1981           73055         05945         WAITING SHELTER         62         1981           73055         06651         WAITING SHELTER         62         1981           73055         06757         WAITING SHELTER         62         1981           73055         06766         WAITING SHELTER         180         1960           73055         07343         WAITING SHELTER         60         1963           73055         07950         WAITING SHELTER         137         1966           73055         07951         WAITING SHELTER         137         1966           73055         07951         WAITING SHELTER         137         1966           73055         07952         WAITING SHELTER         12         1980           73055         09182         WAITING SHELTER         192         1963           73055         09249         WAITING SHELTER         192         1963           73055         09503         WAITING SHELTER         48         1985           73055         09504         WAITING SH	73055	04123	WAITING SHELTER	144	1970
73055         05914         WAITING SHELTER         62         1981           73055         05945         WAITING SHELTER         62         1981           73055         06651         WAITING SHELTER         62         1981           73055         06757         WAITING SHELTER         62         1981           73055         06766         WAITING SHELTER         180         1960           73055         07743         WAITING SHELTER         137         1966           73055         07950         WAITING SHELTER         137         1966           73055         07950         WAITING SHELTER         137         1966           73055         07951         WAITING SHELTER         137         1966           73055         07952         WAITING SHELTER         137         1966           73055         09182         WAITING SHELTER         192         1983           73055         09249         WAITING SHELTER         192         1963           73055         09503         WAITING SHELTER         48         1985           73055         09504         WAITING SHELTER         48         1985           73055         09505         WAITING S	73055	04125	WAITING SHELTER	120	1966
73055         05945         WAITING SHELTER         62         1981           73055         06651         WAITING SHELTER         62         1981           73055         06757         WAITING SHELTER         62         1981           73055         06766         WAITING SHELTER         180         1960           73055         07343         WAITING SHELTER         60         1963           73055         07950         WAITING SHELTER         137         1966           73055         07951         WAITING SHELTER         137         1966           73055         07952         WAITING SHELTER         137         1966           73055         07952         WAITING SHELTER         137         1966           73055         09182         WAITING SHELTER         12         1980           73055         09182         WAITING SHELTER         192         1963           73055         09503         WAITING SHELTER         48         1985           73055         09504         WAITING SHELTER         48         1985           73055         09505         WAITING SHELTER         48         1985           73055         09506         WAITING SHE	73055	04126	WAITING SHELTER	120	1966
73055         06651         WAITING SHELTER         62         1981           73055         06757         WAITING SHELTER         62         1981           73055         06766         WAITING SHELTER         180         1960           73055         07343         WAITING SHELTER         60         1963           73055         07950         WAITING SHELTER         137         1966           73055         07951         WAITING SHELTER         137         1966           73055         07952         WAITING SHELTER         137         1966           73055         09182         WAITING SHELTER         137         1966           73055         09182         WAITING SHELTER         12         1963           73055         09249         WAITING SHELTER         192         1963           73055         09503         WAITING SHELTER         48         1985           73055         09504         WAITING SHELTER         48         1985           73055         09505         WAITING SHELTER         48         1985           73055         09506         WAITING SHELTER         48         1985           73055         09507         WAITING SHE	73055	05914	WAITING SHELTER	62	1981
73055         06757         WAITING SHELTER         62         1981           73055         06766         WAITING SHELTER         180         1960           73055         07343         WAITING SHELTER         60         1963           73055         07950         WAITING SHELTER         137         1966           73055         07951         WAITING SHELTER         137         1966           73055         07952         WAITING SHELTER         137         1966           73055         09182         WAITING SHELTER         72         1980           73055         09249         WAITING SHELTER         192         1963           73055         09503         WAITING SHELTER         48         1985           73055         09504         WAITING SHELTER         48         1985           73055         09504         WAITING SHELTER         48         1985           73055         09505         WAITING SHELTER         48         1985           73055         09506         WAITING SHELTER         48         1985           73055         09506         WAITING SHELTER         48         1985           73055         09508         WAITING SHEL	73055	05945	WAITING SHELTER	62	1981
73055         06766         WAITING SHELTER         180         1960           73055         07343         WAITING SHELTER         60         1963           73055         07950         WAITING SHELTER         137         1966           73055         07951         WAITING SHELTER         137         1966           73055         07952         WAITING SHELTER         137         1966           73055         09182         WAITING SHELTER         72         1980           73055         09249         WAITING SHELTER         192         1963           73055         09503         WAITING SHELTER         48         1985           73055         09504         WAITING SHELTER         48         1985           73055         09505         WAITING SHELTER         48         1985           73055         09506         WAITING SHELTER         48         1985           73055         09506         WAITING SHELTER         48         1985           73055         09507         WAITING SHELTER         48         1985           73055         09508         WAITING SHELTER         48         1985           73072         04770         PO BRANCH <td>73055</td> <td>06651</td> <td>WAITING SHELTER</td> <td>62</td> <td>1981</td>	73055	06651	WAITING SHELTER	62	1981
73055         07343         WAITING SHELTER         60         1963           73055         07950         WAITING SHELTER         137         1966           73055         07951         WAITING SHELTER         137         1966           73055         07952         WAITING SHELTER         137         1966           73055         09182         WAITING SHELTER         72         1980           73055         09249         WAITING SHELTER         192         1963           73055         09503         WAITING SHELTER         48         1985           73055         09504         WAITING SHELTER         48         1985           73055         09505         WAITING SHELTER         48         1985           73055         09506         WAITING SHELTER         48         1985           73055         09507         WAITING SHELTER         48         1985           73055         09508         WAITING SHELTER         48         1985           73072         04770         PO BRANCH         859         1958           73075         07725         PUBLIC TOILET         312         1972           73090         07712         OTHER	73055	06757	WAITING SHELTER	62	1981
73055       07950       WAITING SHELTER       137       1966         73055       07951       WAITING SHELTER       137       1966         73055       07952       WAITING SHELTER       137       1966         73055       09182       WAITING SHELTER       72       1980         73055       09249       WAITING SHELTER       192       1963         73055       09503       WAITING SHELTER       48       1985         73055       09504       WAITING SHELTER       48       1985         73055       09505       WAITING SHELTER       48       1985         73055       09506       WAITING SHELTER       48       1985         73055       09507       WAITING SHELTER       48       1985         73055       09508       WAITING SHELTER       48       1985         73072       04770       PO BRANCH       859       1958         73075       07725       PUBLIC TOILET       312       1972         73090       07712       OTHER       0       1989         74025       01171       ACES FACILITY       4460       1973         74031       04011       GOLF COURSE MNT       3800<	73055	06766	WAITING SHELTER	180	1960
73055         07951         WAITING SHELTER         137         1966           73055         07952         WAITING SHELTER         137         1966           73055         09182         WAITING SHELTER         72         1980           73055         09249         WAITING SHELTER         192         1963           73055         09503         WAITING SHELTER         48         1985           73055         09504         WAITING SHELTER         48         1985           73055         09505         WAITING SHELTER         48         1985           73055         09506         WAITING SHELTER         48         1985           73055         09507         WAITING SHELTER         48         1985           73055         09508         WAITING SHELTER         48         1985           73072         04770         PO BRANCH         859         1958           73075         07725         PUBLIC TOILET         312         1972           73090         07712         OTHER         0         1989           74025         01171         ACES FACILITY         4460         1973           74031         04011         GOLF COURSE MNT <t< td=""><td>73055</td><td>07343</td><td>WAITING SHELTER</td><td>60</td><td>1963</td></t<>	73055	07343	WAITING SHELTER	60	1963
73055       07952       WAITING SHELTER       137       1966         73055       09182       WAITING SHELTER       72       1980         73055       09249       WAITING SHELTER       192       1963         73055       09503       WAITING SHELTER       48       1985         73055       09504       WAITING SHELTER       48       1985         73055       09505       WAITING SHELTER       48       1985         73055       09506       WAITING SHELTER       48       1985         73055       09507       WAITING SHELTER       48       1985         73055       09508       WAITING SHELTER       48       1985         73072       04770       PO BRANCH       859       1958         73075       07725       PUBLIC TOILET       312       1972         73090       07712       OTHER       0       1989         74025       01171       ACES FACILITY       4460       1973         74031       04011       GOLF COURSE MNT       3800       1985         74031       09021       GOLF COURSE MNT       664       1941	73055	07950	WAITING SHELTER	137	1966
73055         09182         WAITING SHELTER         72         1980           73055         09249         WAITING SHELTER         192         1963           73055         09503         WAITING SHELTER         48         1985           73055         09504         WAITING SHELTER         48         1985           73055         09505         WAITING SHELTER         48         1985           73055         09506         WAITING SHELTER         48         1985           73055         09507         WAITING SHELTER         48         1985           73055         09508         WAITING SHELTER         48         1985           73075         09508         WAITING SHELTER         48         1985           73072         04770         PO BRANCH         859         1958           73075         07725         PUBLIC TOILET         312         1972           73090         07712         OTHER         0         1989           74025         01171         ACES FACILITY         4460         1973           74031         04011         GOLF COURSE MNT         3800         1985           74031         09021         GOLF COURSE MNT <t< td=""><td>73055</td><td>07951</td><td>WAITING SHELTER</td><td>137</td><td>1966</td></t<>	73055	07951	WAITING SHELTER	137	1966
73055         09249         WAITING SHELTER         192         1963           73055         09503         WAITING SHELTER         48         1985           73055         09504         WAITING SHELTER         48         1985           73055         09505         WAITING SHELTER         48         1985           73055         09506         WAITING SHELTER         48         1985           73055         09507         WAITING SHELTER         48         1985           73055         09508         WAITING SHELTER         48         1985           73072         04770         PO BRANCH         859         1958           73075         07725         PUBLIC TOILET         312         1972           73090         07712         OTHER         0         1989           74025         01171         ACES FACILITY         4460         1973           74031         04011         GOLF COURSE MNT         3800         1985           74031         09021         GOLF COURSE MNT         664         1941	73055	07952	WAITING SHELTER	137	1966
73055       09503       WAITING SHELTER       48       1985         73055       09504       WAITING SHELTER       48       1985         73055       09505       WAITING SHELTER       48       1985         73055       09506       WAITING SHELTER       48       1985         73055       09507       WAITING SHELTER       48       1985         73055       09508       WAITING SHELTER       48       1985         73072       04770       PO BRANCH       859       1958         73075       07725       PUBLIC TOILET       312       1972         73090       07712       OTHER       0       1989         74025       01171       ACES FACILITY       4460       1973         74031       04011       GOLF COURSE MNT       3800       1985         74031       09021       GOLF COURSE MNT       664       1941	73055	09182	WAITING SHELTER	72	1980
73055       09504       WAITING SHELTER       48       1985         73055       09505       WAITING SHELTER       48       1985         73055       09506       WAITING SHELTER       48       1985         73055       09507       WAITING SHELTER       48       1985         73055       09508       WAITING SHELTER       48       1985         73072       04770       PO BRANCH       859       1958         73075       07725       PUBLIC TOILET       312       1972         73090       07712       OTHER       0       1989         74025       01171       ACES FACILITY       4460       1973         74031       04011       GOLF COURSE MNT       3800       1985         74031       09021       GOLF COURSE MNT       664       1941	73055	09249	WAITING SHELTER	192	1963
73055         09505         WAITING SHELTER         48         1985           73055         09506         WAITING SHELTER         48         1985           73055         09507         WAITING SHELTER         48         1985           73055         09508         WAITING SHELTER         48         1985           73072         04770         PO BRANCH         859         1958           73075         07725         PUBLIC TOILET         312         1972           73090         07712         OTHER         0         1989           74025         01171         ACES FACILITY         4460         1973           74031         04011         GOLF COURSE MNT         3800         1985           74031         09021         GOLF COURSE MNT         664         1941	73055	09503	WAITING SHELTER	48	1985
73055       09506       WAITING SHELTER       48       1985         73055       09507       WAITING SHELTER       48       1985         73055       09508       WAITING SHELTER       48       1985         73072       04770       PO BRANCH       859       1958         73075       07725       PUBLIC TOILET       312       1972         73090       07712       OTHER       0       1989         74025       01171       ACES FACILITY       4460       1973         74031       04011       GOLF COURSE MNT       3800       1985         74031       09021       GOLF COURSE MNT       664       1941	73055	09504	WAITING SHELTER	48	1985
73055       09507       WAITING SHELTER       48       1985         73055       09508       WAITING SHELTER       48       1985         73072       04770       PO BRANCH       859       1958         73075       07725       PUBLIC TOILET       312       1972         73090       07712       OTHER       0       1989         74025       01171       ACES FACILITY       4460       1973         74031       04011       GOLF COURSE MNT       3800       1985         74031       09021       GOLF COURSE MNT       664       1941	73055	09505	WAITING SHELTER	48	1985
73055       09508       WAITING SHELTER       48       1985         73072       04770       PO BRANCH       859       1958         73075       07725       PUBLIC TOILET       312       1972         73090       07712       OTHER       0       1989         74025       01171       ACES FACILITY       4460       1973         74025       01172       ACES FACILITY       4460       1973         74031       04011       GOLF COURSE MNT       3800       1985         74031       09021       GOLF COURSE MNT       664       1941	73055	09506	WAITING SHELTER	48	1985
73072         04770         PO BRANCH         859         1958           73075         07725         PUBLIC TOILET         312         1972           73090         07712         OTHER         0         1989           74025         01171         ACES FACILITY         4460         1973           74025         01172         ACES FACILITY         4460         1973           74031         04011         GOLF COURSE MNT         3800         1985           74031         09021         GOLF COURSE MNT         664         1941	73055	09507	WAITING SHELTER	48	1985
73075     07725     PUBLIC TOILET     312     1972       73090     07712     OTHER     0     1989       74025     01171     ACES FACILITY     4460     1973       74025     01172     ACES FACILITY     4460     1973       74031     04011     GOLF COURSE MNT     3800     1985       74031     09021     GOLF COURSE MNT     664     1941	73055	09508	WAITING SHELTER	48	1985
73090         07712         OTHER         0         1989           74025         01171         ACES FACILITY         4460         1973           74025         01172         ACES FACILITY         4460         1973           74031         04011         GOLF COURSE MNT         3800         1985           74031         09021         GOLF COURSE MNT         664         1941	73072	04770	PO BRANCH	859	1958
74025     01171     ACES FACILITY     4460     1973       74025     01172     ACES FACILITY     4460     1973       74031     04011     GOLF COURSE MNT     3800     1985       74031     09021     GOLF COURSE MNT     664     1941	73075	07725	PUBLIC TOILET	312	1972
74025       01172       ACES FACILITY       4460       1973         74031       04011       GOLF COURSE MNT       3800       1985         74031       09021       GOLF COURSE MNT       664       1941	73090	07712	OTHER	0	1989
74031         04011         GOLF COURSE MNT         3800         1985           74031         09021         GOLF COURSE MNT         664         1941	74025	01171	ACES FACILITY	4460	1973
74031 09021 GOLF COURSE MNT 664 1941	74025	01172	ACES FACILITY	4460	1973
	74031	04011	GOLF COURSE MNT	3800	1985
74049 07718 RIDING STABLE 2558 1941			GOLF COURSE MNT	664	1941
	74049	07718	RIDING STABLE	2558	1941

TABLE 2.1.3.1 BUILDINGS WITHOUT WATER - NO ECOS EVALUATED

CATEGORY		CATEGORY/DESCRIPTION	AREA (SQ FT)	YEAR
74049	07719	RIDING STABLE	3204	1918
74049	07724	RIDING STABLE	2558	1940
74049	07726	RIDING STABLE	2555	1938
74049	07727	RIDING STABLE	2510	1938
74049	09022	RIDING STABLE	5168	1941
74062	04128	SNACK BAR	144	1979
74069	00542	RECREATION BLDG	1144	1941
74069	00544	RECREATION BLDG	1144	1941
74069	00546	RECREATION BLDG	1144	1941
74069	09191	RECREATION BLDG	569	1972
74069	09192	RECREATION BLDG	569	1972
74069	09193	RECREATION BLDG	569	1972
74069	09194	RECREATION BLDG	569	1972
74069	09195	RECREATION BLDG	569	1969
74069	09196	RECREATION BLDG	569	1969
74069	09197	RECREATION BLDG	628	1969
74069	09198	RECREATION BLDG	569	1969
74069	09199	RECREATION BLDG	3018	1969
74090	07713	OTHER	72	1988
82116	00601	HEAT PL BLDG	405	1941
82116	07033	HEAT PL BLDG	359	1941
82150	07203	STEAM PL POWER	13674	1986
84150	09187	CHLORINATOR BLDG	48	1972
84220	09213	WATER PUMP P		1942

TABLE 2.1.3.2 BUILDINGS ABANDONED OR NOT OCCUPIED NO ECOS EVALUATED

CATEGORY	BLDG	CATEGORY/DESCRIPTION	AREA (SQ FT)	YEAR
17120	00265	GEN INST BLDG	3158	1941
17120	01011	GEN INST BLDG	1843	1941
17120	01501	GEN INST BLDG	3871	1943
17120	01526	GEN INST BLDG	4078	1958
17120	06682	GEN INST BLDG	2892	1941
17150	06763	BN CLASSROOMS	3547	1953
21410	00160	VEH MNT SH ORG	3427	1942
21420	00578	VEH MNT SH DS	2728	1942
21420	00579	VEH MNT SH DS	2728	1942
21420	00584	VEH MNT SH DS	8208	1943
21420	07330	VEH MNT SH DS	4687	1942
21420	07331	VEH MNT SH DS	4687	1942
21420	07340	VEH MNT SH DS	4687	1942
17120	00580	VEH MNT SH DS	2728	1942
17120	07341	VEH MNT SH DS	3560	1942
17120	07423	VEH MNT SH DS	4687	1942
72114	00703	ENL BKS AN TR	4720	1941
72114	00704	ENL BKS AN TR	4720	1941
72114	00705	ENL BKS AN TR	4720	1941
72114	00801	ENL BKS AN TR	4720	1941
72114	00802	ENL BKS AN TR	4720	1941
72114	00804	ENL BKS AN TR	4720	1941
72114	00809	ENL BKS AN TR	4720	1941
72114	00811	ENL BKS AN TR	4720	1941
72114	00812	ENL BKS AN TR	4720	1941
72114	00816	ENL BKS AN TR	4720	1941
72114	00817	ENL BKS AN TR	4720	1941
72114	00819	ENL BKS AN TR	4720	1941
72114	00824	ENL BKS AN TR	4720	1941
72114	00826	ENL BKS AN TR	4720	1941
72114	00827	ENL BKS AN TR	4883	1941
72114	00831	ENL BKS AN TR	4720	1941
72114	00836	ENL BKS AN TR	4720	1941
72114	00839	ENL BKS AN TR	4720	1941
72114	07385	ENL BKS AN TR	4720	1941
72114	07388	ENL BKS AN TR	4720	1941
72114	07391	ENL BKS AN TR	4720	1941
72114	07396	ENL BKS AN TR	4720	1985
72210	07386	EN PERS DINE	2500	1942
72220	02442	OFF FR DINE FAC	10977	1962
17123	06677	DET DAY ROOM	2892	1941
17123	06678	DET DAY ROOM	0	1941
73018	00887	RELG EDUC FAC	1200	1973
73019	00888	UNIT CHAPEL	3765	1942
73025	02321	PASTRY KITCHEN	7733	1938
74025	01023	ACES FACILITY	1296	1941
74027	06645	OPEN DIN NCO	9525	1943
74027	07375	DRAMA CENTER	22746	1940
				DACE 2

TABLE 2.1.3.2 BUILDINGS ABANDONED OR NOT OCCUPIED NO ECOS EVALUATED

CATEGORY	BLDG	CATEGORY/DESCRIPTION	AREA (SQ FT)	YEAR
74066	01338	YOUTH CENTER	8611	1930
74069	00820	RECREATION BLDG	1144	1941
74069	00822	RECREATION BLDG	1144	1941
74069	00833	RECREATION BLDG	1144	1941
74069	05020	RECREATION BLDG	4569	1943
74069	06626	RECREATION BLDG	4320	1942

TABLE 2.1.3.3 BUILDINGS THAT NO LONGER EXIST NO ECOS EVALUATED

CATEGORY	BLDG	CATEGORY_DESCR	AREA (SQ FT)	YEAR
17120	00224	GEN INST BLDG	1676	1942
17120	00727	GEN INST BLDG	2360	1941
17120	02710	GEN INST BLDG	3246	1941
17120	02713	GEN INST BLDG	3246	1941
17120	02718	GEN INST BLDG	4720	1941
17120	02719	GEN INST BLDG	4720	1941
17120	07311	GEN INST BLDG	3108	1942
17130	00707	APPL INST BLDG	3380	1941
17130	00745	APPL INST BLDG	3548	1953
17130	00746	APPL INST BLDG	3548	1953
21410	00159	VEH MNT SH ORG	20833	1942
21920	04066	FE FACILITY	2250	1942
72114	00570	ENL BKS AN TR	4720	1941
72114	00617	ENL BKS AN TR	4720	1942
72114	00620	ENL BKS AN TR	4720	1942
72114	00621	ENL BKS AN TR	4720	1941
72114	00622	ENL BKS AN TR	4720	1941
72114	00624	ENL BKS AN TR	4720	1941
72114	00625	ENL BKS AN TR	4720	1941
72114	00626	ENL BKS AN TR	4720	1941
72114	00627	ENL BKS AN TR	4720	1941
72114	00628	ENL BKS AN TR	4720	1941
72114	00630	ENL BKS AN TR	4720	1941
72114	00645	ENL BKS AN TR	4720	1941
72114	00646	ENL BKS AN TR	4720	1941
72114	00647	ENL BKS AN TR	4720	1941
72114	00648	ENL BKS AN TR	4720	1941
72114	00649	ENL BKS AN TR	4720	1941
72114	00650	ENL BKS AN TR	4720	1941
72114	00651	ENL BKS AN TR	4720	1941
72114	00652	ENL BKS AN TR	4720	1941
72114	00659	ENL BKS AN TR	4720	1941
72114	00660	ENL BKS AN TR	4720	1941
72114	00661	ENL BKS AN TR	4720	1941
72114	00665	ENL BKS AN TR	4720	1941
72114	00666	ENL BKS AN TR	4720	1941
72114	00667	ENL BKS AN TR	4720	1941
72114	00668	ENL BKS AN TR	4720	1941
72114	00669	ENL BKS AN TR	4720	1941
72114	00683	ENL BKS AN TR	4720	1941
72114	00685	ENL BKS AN TR	4720	1941
72114	00686	ENL BKS AN TR	4720	1941
72114	00687	ENL BKS AN TR	4720	1941
72114	00688	ENL BKS AN TR	4720	1941
72114	00717	ENL BKS AN TR	4720	1941
72114	00726	ENL BKS AN TR	4720	1941
72114	00728	ENL BKS AN TR	4720	1941
72114	00729	ENL BKS AN TR	4720	1941

TABLE 2.1.3.3 BUILDINGS THAT NO LONGER EXIST NO ECOS EVALUATED

CATEGORY	BLDG	CATEGORY_DESCR	AREA (SQ FT)	YEAR
72114	02705	ENL BKS AN TR	4720	1941
72114	02706	ENL BKS AN TR	4720	1941
72114	02707	ENL BKS AN TR	4720	1941
72114	02709	ENL BKS AN TR	4720	1941
72114	02832	ENL BKS AN TR	4720	1941
72114	02844	ENL BKS AN TR	4720	1941
72114	02847	ENL BKS AN TR	4720	1941
72114	02850	ENL BKS AN TR	4720	1941
72114	02853	ENL BKS AN TR	4720	1941
72114	02855	ENL BKS AN TR	4720	1941
72114	02858	ENL BKS AN TR	4720	1941
72114	02859	ENL BKS AN TR	4720	1941
72114	02861	ENL BKS AN TR	4720	1941
72114	02864	ENL BKS AN TR	4720	1941
72114	02865	ENL BKS AN TR	4720	1941
72114	02866	ENL BKS AN TR	4720	1941
72114	02870	ENL BKS AN TR	4720	1941
72114	02871	ENL BKS AN TR	4720	1941
72114	02874	ENL BKS AN TR	4720	1941
72114	02875	ENL BKS AN TR	4720	1941
72114	02878	ENL BKS AN TR	4720	1941
72114	02879	ENL BKS AN TR	4720	1941
72114	02882	ENL BKS AN TR	4720	1941
72114	02883	ENL BKS AN TR	4720	1941
72114	02886	ENL BKS AN TR	4720	1941
72114	02887	ENL BKS AN TR	4720	1941
72114	02890	ENL BKS AN TR	4720	1941
72114	02891	ENL BKS AN TR	4720	1941
72114	02893	ENL BKS AN TR	4720	1941
72114	02894	ENL BKS AN TR	4720	1941
72114	02903	ENL BKS AN TR	4720	1941
72114	02904	ENL BKS AN TR	4720	1941
72114	02905	ENL BKS AN TR	4720	1941
72114	02915	ENL BKS AN TR	4720	1941
72114	02916	ENL BKS AN TR	4720	1941
72114	02922	ENL BKS AN TR	4720	1941
72114	02923	ENL BKS AN TR	4720	1941
72114	02929	ENL BKS AN TR	4720	1941
72114	02945	ENL BKS AN TR	4720	1941
72114	04067	ENL BKS AN TR	4720	1941
72114	05001	ENL BKS AN TR	4720	1941
72114	05002	ENL BKS AN TR	4720	1941
72114	05004	ENL BKS AN TR	4720	1941
72114	07303	ENL BKS AN TR	4720	1941
72114	07304	ENL BKS AN TR	4720	1941
72114	07305	ENL BKS AN TR	4720	1941
72114	07306	ENL BKS AN TR	4720	1941
72114	07307	ENL BKS AN TR	4720	1941

TABLE 2.1.3.3 BUILDINGS THAT NO LONGER EXIST NO ECOS EVALUATED

72114         07313         ENL BKS AN TR         4720         1941           72181         02708         ENL BKS AN TR         4720         1941           72181         02708         ENL BKS BASIC         4720         1941           72210         00629         EN PERS DINE         2360         1951           72210         00642         EN PERS DINE         2360         1951           72210         00644         EN PERS DINE         3100         1942           72210         00656         EN PERS DINE         2360         1941           72210         00675         EN PERS DINE         2360         1941           72210         00677         EN PERS DINE         2360         1941           72210         00678         EN PERS DINE         2360         1941           72210         00803         EN PERS DINE         2372         1951           72210         00803         EN PERS DINE         2208         1942           72210         00830         EN PERS DINE         2360         1941           72210         00830         EN PERS DINE         2360         1941           72210         0030         EN PERS DINE <td< th=""><th>CATEGORY</th><th>BLDG</th><th>CATEGORY_DESCR</th><th>AREA (SQ FT)</th><th>YEAR</th></td<>	CATEGORY	BLDG	CATEGORY_DESCR	AREA (SQ FT)	YEAR
72114         07397         ENL BKS BASIC         4720         1941           72181         02708         ENL BKS BASIC         4720         1941           72210         00629         EN PERS DINE         2360         1951           72210         00642         EN PERS DINE         2560         1951           72210         00644         EN PERS DINE         2560         1951           72210         00656         EN PERS DINE         2560         1942           72210         00675         EN PERS DINE         2360         1941           72210         00677         EN PERS DINE         2360         1941           72210         00678         EN PERS DINE         2360         1941           72210         00678         EN PERS DINE         2350         1941           72210         00818         EN PERS DINE         2372         1951           72210         00830         EN PERS DINE         2372         1951           72210         00830         EN PERS DINE         2208         1941           72210         07308         EN PERS DINE         2350         1951           72360         00623         DET DAY ROOM <td< td=""><td></td><td>07313</td><td>ENL BKS AN TR</td><td>4720</td><td>1941</td></td<>		07313	ENL BKS AN TR	4720	1941
72210         00629         EN PERS DINE         2360         1951           72210         00642         EN PERS DINE         2650         1951           72210         00644         EN PERS DINE         2650         1942           72210         00656         EN PERS DINE         2360         1941           72210         00675         EN PERS DINE         2360         1941           72210         00677         EN PERS DINE         2360         1941           72210         00677         EN PERS DINE         2361         1942           72210         00803         EN PERS DINE         2372         1951           72210         00818         EN PERS DINE         2208         1942           72210         00830         EN PERS DINE         2208         1941           72210         00830         EN PERS DINE         2360         1941           72210         00849         EN PERS DINE         2360         1941           72210         07308         EN PERS DINE         2360         1941           72210         07308         EN PERS DINE         2360         1941           72210         07308         EN PERS DINE         2	72114	07397	ENL BKS AN TR	4720	1941
72210         00642         EN PERS DINE         2650         1951           72210         00644         EN PERS DINE         3100         1942           72210         00656         EN PERS DINE         2650         1942           72210         00675         EN PERS DINE         2360         1941           72210         00677         EN PERS DINE         2360         1941           72210         00718         EN PERS DINE         2360         1941           72210         00803         EN PERS DINE         2372         1951           72210         00818         EN PERS DINE         2208         1942           72210         00830         EN PERS DINE         2208         1942           72210         00830         EN PERS DINE         2360         1941           72210         00830         EN PERS DINE         2360         1941           72210         07308         EN PERS DINE         2360         1941           72210         07308         EN PERS DINE         2360         1941           72360         00623         DET DAY ROOM         2360         1941           72360         00623         DET DAY ROOM         2	72181	02708	ENL BKS BASIC	4720	1941
72210         00644         EN PERS DINE         2650         1942           72210         00656         EN PERS DINE         2650         1942           72210         00675         EN PERS DINE         2360         1941           72210         00677         EN PERS DINE         2360         1941           72210         00718         EN PERS DINE         2360         1941           72210         00803         EN PERS DINE         2231         1942           72210         00818         EN PERS DINE         2208         1942           72210         00830         EN PERS DINE         2208         1941           72210         00830         EN PERS DINE         2208         1941           72210         00830         EN PERS DINE         2208         1941           72210         07308         EN PERS DINE         2360         1941           72210         07308         EN PERS DINE         2	72210	00629	EN PERS DINE	2360	1951
72210         00656         EN PERS DINE         2360         1942           72210         00675         EN PERS DINE         2360         1941           72210         00677         EN PERS DINE         2360         1941           72210         00677         EN PERS DINE         2361         1942           72210         00803         EN PERS DINE         2372         1951           72210         00818         EN PERS DINE         2208         1942           72210         00830         EN PERS DINE         2208         1941           72210         02849         EN PERS DINE         2360         1941           72210         07308         EN PERS DINE         2360         1941           72210         07308         EN PERS DINE         3250         1951           72360         00623         DET DAY ROOM         2360         1941           72360         00623         DET DAY ROOM         2527         1941           72411         04060         OFF QTR TRANS         7670         1941           72411         04061         OFF QTR TRANS         7670         1941           72411         04062         OFF QTR TRANS <t< td=""><td>72210</td><td>00642</td><td>EN PERS DINE</td><td>2650</td><td>1951</td></t<>	72210	00642	EN PERS DINE	2650	1951
72210         00675         EN PERS DINE         2360         1941           72210         00677         EN PERS DINE         2360         1941           72210         00718         EN PERS DINE         2351         1942           72210         00803         EN PERS DINE         2372         1951           72210         00818         EN PERS DINE         2208         1942           72210         00830         EN PERS DINE         2208         1941           72210         02849         EN PERS DINE         2360         1941           72210         07308         EN PERS DINE         2350         1941           72360         00623         DET DAY ROOM         2360         1941           72360         00623         DET DAY ROOM         2360         1941           72411         04060         OFF QTR TRANS         7670         1941           72411         04060         OFF QTR TRANS         7670         1941           72411         04061         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS	72210	00644	EN PERS DINE	3100	1942
72210         00677         EN PERS DINE         2360         1941           72210         00718         EN PERS DINE         2631         1942           72210         00803         EN PERS DINE         2372         1951           72210         00818         EN PERS DINE         2208         1942           72210         00830         EN PERS DINE         2208         1941           72210         02849         EN PERS DINE         2360         1941           72210         07308         EN PERS DINE         3250         1951           72360         00623         DET DAY ROOM         2360         1941           72360         00623         DET DAY ROOM         2360         1941           72360         00623         DET DAY ROOM         257         1941           72411         04061         OFF QTR TRANS         7670         1941           72411         04062         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         <	72210	00656	EN PERS DINE	2650	1942
72210         00718         EN PERS DINE         2631         1942           72210         00803         EN PERS DINE         2372         1951           72210         00818         EN PERS DINE         2208         1942           72210         00830         EN PERS DINE         2208         1941           72210         02849         EN PERS DINE         2360         1941           72210         07308         EN PERS DINE         2360         1941           722360         00623         DET DAY ROOM         2380         1941           72360         00623         DET DAY ROOM         2527         1941           72411         04060         OFF QTR TRANS         7670         1941           72411         04061         OFF QTR TRANS         7670         1941           72411         04062         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04069         OFF QTR TRANS         7670         1941           72411         04069         OFF QTR TRANS         7670         1941           72411         04070         OFF QTR TRANS	72210	00675	EN PERS DINE	2360	1941
72210         00803         EN PERS DINE         2372         1951           72210         00818         EN PERS DINE         2208         1942           72210         00830         EN PERS DINE         2208         1941           72210         02849         EN PERS DINE         2360         1941           72210         07308         EN PERS DINE         3250         1951           72360         00623         DET DAY ROOM         2360         1941           72360         00623         DET DAY ROOM         2360         1941           72360         00623         DET DAY ROOM         2527         1941           72411         04060         OFF QTR TRANS         7670         1941           72411         04061         OFF QTR TRANS         7670         1941           72411         04062         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04069         OFF QTR TRANS         7670         1941           72411         04070         OFF QTR TRANS         7670         1941           72411         04070         OFF QTR TRANS	72210	00677	EN PERS DINE	2360	1941
72210         00818         EN PERS DINE         2208         1942           72210         00830         EN PERS DINE         2208         1941           72210         02849         EN PERS DINE         2360         1941           72210         07308         EN PERS DINE         3250         1951           72360         00623         DET DAY ROOM         2360         1941           72360         00623         DET DAY ROOM         2527         1941           72411         04060         OFF QTR TRANS         7670         1941           72411         04061         OFF QTR TRANS         7670         1941           72411         04062         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04069         OFF QTR TRANS         7670         1941           72411         04070         OFF QTR TRANS         7670         1941           72411         04073         OFF QTR TRANS         7670         1941           72411         04073         OFF QTR TRANS	72210	00718	EN PERS DINE	2631	1942
72210         00830         EN PERS DINE         2208         1941           72210         02849         EN PERS DINE         2360         1941           72210         07308         EN PERS DINE         3250         1951           72360         00623         DET DAY ROOM         2360         1941           72360         00623         DET DAY ROOM         2527         1941           72411         04060         OFF QTR TRANS         7670         1941           72411         04061         OFF QTR TRANS         7670         1941           72411         04062         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04069         OFF QTR TRANS         7670         1941           72411         04070         OFF QTR TRANS         7670         1941           72411         04070         OFF QTR TRANS         7670         1941           72411         04073         OFF QTR TRANS         7670         1941           72411         06635         OFF QTR TRANS	72210	00803	EN PERS DINE	2372	1951
72210         02849         EN PERS DINE         2360         1941           72210         07308         EN PERS DINE         3250         1951           72360         00623         DET DAY ROOM         2360         1941           72360         00623         DET DAY ROOM         2527         1941           72411         04060         OFF QTR TRANS         7670         1941           72411         04061         OFF QTR TRANS         7670         1941           72411         04062         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04069         OFF QTR TRANS         7670         1941           72411         04070         OFF QTR TRANS         7670         1941           72411         04071         OFF QTR TRANS         7670         1941           72411         04074         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS	72210	00818	EN PERS DINE	2208	1942
72210         07308         EN PERS DINE         3250         1951           72360         00623         DET DAY ROOM         2360         1941           72360         00623         DET DAY ROOM         2527         1941           72411         04060         OFF QTR TRANS         7670         1941           72411         04061         OFF QTR TRANS         7670         1941           72411         04062         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04069         OFF QTR TRANS         7670         1941           72411         04070         OFF QTR TRANS         7670         1941           72411         04071         OFF QTR TRANS         7670         1941           72411         04073         OFF QTR TRANS         7670         1941           72411         04074         OFF QTR TRANS         7670         1941           72411         06635         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS	72210	00830	EN PERS DINE	2208	1941
72360         00623         DET DAY ROOM         2360         1941           72360         00623         DET DAY ROOM         2527         1941           72411         04060         OFF QTR TRANS         7670         1941           72411         04061         OFF QTR TRANS         7670         1941           72411         04062         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04069         OFF QTR TRANS         7670         1941           72411         04070         OFF QTR TRANS         7670         1941           72411         04071         OFF QTR TRANS         7670         1941           72411         04073         OFF QTR TRANS         7670         1941           72411         04074         OFF QTR TRANS         7670         1941           72411         06635         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS	72210	02849	EN PERS DINE	2360	1941
72360         00623         DET DAY ROOM         2527         1941           72411         04060         OFF QTR TRANS         7670         1941           72411         04061         OFF QTR TRANS         7670         1941           72411         04062         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04069         OFF QTR TRANS         7670         1941           72411         04070         OFF QTR TRANS         7670         1941           72411         04071         OFF QTR TRANS         7670         1941           72411         04073         OFF QTR TRANS         7670         1941           72411         04073         OFF QTR TRANS         7670         1941           72411         04074         OFF QTR TRANS         7670         1941           72411         06635         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS	72210	07308	EN PERS DINE	3250	1951
72411         04060         OFF QTR TRANS         7670         1941           72411         04061         OFF QTR TRANS         7670         1941           72411         04062         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04069         OFF QTR TRANS         7670         1941           72411         04070         OFF QTR TRANS         7670         1941           72411         04071         OFF QTR TRANS         7670         1941           72411         04073         OFF QTR TRANS         7670         1941           72411         04074         OFF QTR TRANS         7670         1941           72411         04074         OFF QTR TRANS         7670         1941           72411         06635         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS         7670         1941           72411         06640         OFF QTR TRANS         7670         1941           73018         00212         REL EDUC FAC	72360	00623	DET DAY ROOM	2360	1941
72411         04061         OFF QTR TRANS         7670         1941           72411         04062         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04069         OFF QTR TRANS         7670         1941           72411         04070         OFF QTR TRANS         7670         1941           72411         04071         OFF QTR TRANS         7670         1941           72411         04073         OFF QTR TRANS         7670         1941           72411         04074         OFF QTR TRANS         7670         1941           72411         06635         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS         7670         1941           73018         0212         REL EDUC FAC         3106         1941           73018         02212         REL EDUC FAC	72360	00623	DET DAY ROOM	2527	1941
72411         04062         OFF QTR TRANS         7670         1941           72411         04063         OFF QTR TRANS         7670         1941           72411         04069         OFF QTR TRANS         7670         1941           72411         04070         OFF QTR TRANS         7670         1941           72411         04071         OFF QTR TRANS         7670         1941           72411         04073         OFF QTR TRANS         7670         1941           72411         04074         OFF QTR TRANS         7670         1941           72411         06035         OFF QTR TRANS         7670         1941           72411         06635         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS         7670         1941           73018         00212         REL EDUC FAC         3106         1941           73018         00212         REL EDUC FAC         4720         1941           73018         02337         REL EDUC FAC	72411	04060	OFF QTR TRANS	7670	1941
72411         04063         OFF QTR TRANS         7670         1941           72411         04069         OFF QTR TRANS         7670         1941           72411         04070         OFF QTR TRANS         7670         1941           72411         04071         OFF QTR TRANS         7670         1941           72411         04073         OFF QTR TRANS         7670         1941           72411         04074         OFF QTR TRANS         7670         1941           72411         04074         OFF QTR TRANS         7670         1941           72411         06635         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS         7670         1941           73018         00212         REL EDUC FAC         3106         1941           73018         00212         REL EDUC FAC         4720         1941           73018         00219         REL EDUC FAC         4720         1941           73018         02337         REL EDUC FAC	72411	04061	OFF QTR TRANS	7670	1941
72411         04069         OFF QTR TRANS         7670         1941           72411         04070         OFF QTR TRANS         7670         1941           72411         04071         OFF QTR TRANS         7670         1941           72411         04073         OFF QTR TRANS         7670         1941           72411         04074         OFF QTR TRANS         7670         1941           72411         06635         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS         7670         1941           72411         06640         OFF QTR TRANS         7670         1941           72411         06640         OFF QTR TRANS         7670         1941           73018         00212         REL EDUC FAC         3106         1941           73018         00217         REL EDUC FAC         4720         1941           73018         02337         REL EDUC FAC         4720         1941           73018         02336         UNIT CHAPEL	72411	04062	OFF QTR TRANS	7670	1941
72411         04070         OFF QTR TRANS         7670         1941           72411         04071         OFF QTR TRANS         7670         1941           72411         04073         OFF QTR TRANS         7670         1941           72411         04074         OFF QTR TRANS         7670         1941           72411         06635         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS         7670         1941           72411         06640         OFF QTR TRANS         7670         1941           73018         00212         REL EDUC FAC         3106         1941           73018         00217         REL EDUC FAC         4720         1941           73018         00219         REL EDUC FAC         4720         1941           73018         02337         REL EDUC FAC         1200         1973           73019         02336         UNIT CHAPEL         3765         1941           72210         06646         UNIT CHAPEL         3765         1941           74069         00662         RECREATION BLDG	72411	04063	OFF QTR TRANS	7670	1941
72411         04071         OFF QTR TRANS         7670         1941           72411         04073         OFF QTR TRANS         7670         1941           72411         04074         OFF QTR TRANS         7670         1941           72411         06635         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS         7670         1941           72411         06640         OFF QTR TRANS         7670         1941           73018         00212         REL EDUC FAC         3106         1941           73018         00217         REL EDUC FAC         4720         1941           73018         00219         REL EDUC FAC         4720         1941           73018         02337         REL EDUC FAC         1200         1973           73019         02336         UNIT CHAPEL         3765         1941           72210         06646         UNIT CHAPEL         3765         1941           74069         00662         RECREATION BLDG         3663         1943           74069         00680         RECREATION BLDG	72411	04069	OFF QTR TRANS	7670	1941
72411         04073         OFF QTR TRANS         7670         1941           72411         04074         OFF QTR TRANS         7670         1941           72411         06635         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS         7670         1941           72411         06640         OFF QTR TRANS         7670         1941           73018         00212         REL EDUC FAC         3106         1941           73018         00217         REL EDUC FAC         4720         1941           73018         00219         REL EDUC FAC         4720         1941           73018         02337         REL EDUC FAC         1200         1973           73019         02336         UNIT CHAPEL         3765         1941           72210         06646         UNIT CHAPEL         3765         1941           74069         00662         RECREATION BLDG         3663         1943           74069         00680         RECREATION BLDG         1144         1941           74069         00723         RECREATION BLDG	72411	04070	OFF QTR TRANS	7670	1941
72411         04074         OFF QTR TRANS         7670         1941           72411         06635         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS         7670         1941           72411         06640         OFF QTR TRANS         7670         1941           73018         00212         REL EDUC FAC         3106         1941           73018         00217         REL EDUC FAC         4720         1941           73018         00219         REL EDUC FAC         4720         1941           73018         02337         REL EDUC FAC         1200         1973           73019         02336         UNIT CHAPEL         3765         1941           72210         06646         UNIT CHAPEL         3765         1941           74069         00662         RECREATION BLDG         3663         1943           74069         00662         RECREATION BLDG         1144         1941           74069         00723         RECREATION BLDG         1144         1941           74069         00725         RECREATION BLDG <td>72411</td> <td>04071</td> <td>OFF QTR TRANS</td> <td>7670</td> <td>1941</td>	72411	04071	OFF QTR TRANS	7670	1941
72411         06635         OFF QTR TRANS         7670         1941           72411         06636         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS         7670         1941           72411         06640         OFF QTR TRANS         7670         1941           73018         00212         REL EDUC FAC         3106         1941           73018         00217         REL EDUC FAC         4720         1941           73018         00219         REL EDUC FAC         4720         1941           73018         02337         REL EDUC FAC         1200         1973           73019         02336         UNIT CHAPEL         3765         1941           72210         06646         UNIT CHAPEL         3765         1941           74015         04065         CIV CLUB FAC         6884         1941           74069         00662         RECREATION BLDG         3663         1943           74069         00723         RECREATION BLDG         1144         1941           74069         00725         RECREATION BLDG         1144         1941           74069         00730         RECREATION BLDG	72411	04073	OFF QTR TRANS	7670	1941
72411         06636         OFF QTR TRANS         7670         1941           72411         06639         OFF QTR TRANS         7670         1941           72411         06640         OFF QTR TRANS         7670         1941           73018         00212         REL EDUC FAC         3106         1941           73018         00217         REL EDUC FAC         4720         1941           73018         00219         REL EDUC FAC         4720         1941           73018         02337         REL EDUC FAC         1200         1973           73019         02336         UNIT CHAPEL         3765         1941           72210         06646         UNIT CHAPEL         3765         1941           74015         04065         CIV CLUB FAC         6884         1941           74069         00662         RECREATION BLDG         3663         1943           74069         00680         RECREATION BLDG         1144         1941           74069         00723         RECREATION BLDG         1144         1941           74069         00730         RECREATION BLDG         1144         1941           74069         02712         RECREATION BLDG <td>72411</td> <td>04074</td> <td>OFF QTR TRANS</td> <td>7670</td> <td>1941</td>	72411	04074	OFF QTR TRANS	7670	1941
72411         06639         OFF QTR TRANS         7670         1941           72411         06640         OFF QTR TRANS         7670         1941           73018         00212         REL EDUC FAC         3106         1941           73018         00217         REL EDUC FAC         4720         1941           73018         00219         REL EDUC FAC         4720         1941           73018         02337         REL EDUC FAC         1200         1973           73019         02336         UNIT CHAPEL         3765         1941           72210         06646         UNIT CHAPEL         3765         1941           74015         04065         CIV CLUB FAC         6884         1941           74069         00662         RECREATION BLDG         3663         1943           74069         00680         RECREATION BLDG         1144         1941           74069         00723         RECREATION BLDG         1144         1941           74069         00725         RECREATION BLDG         1144         1941           74069         00730         RECREATION BLDG         1250         1942           74069         02712         RECREATION BLDG<	72411	06635	OFF QTR TRANS	7670	1941
72411         06640         OFF QTR TRANS         7670         1941           73018         00212         REL EDUC FAC         3106         1941           73018         00217         REL EDUC FAC         4720         1941           73018         00219         REL EDUC FAC         4720         1941           73018         02337         REL EDUC FAC         1200         1973           73019         02336         UNIT CHAPEL         3765         1941           72210         06646         UNIT CHAPEL         3765         1941           74015         04065         CIV CLUB FAC         6884         1941           74069         00662         RECREATION BLDG         3663         1943           74069         00680         RECREATION BLDG         1144         1941           74069         00723         RECREATION BLDG         1144         1941           74069         00725         RECREATION BLDG         1144         1941           74069         00730         RECREATION BLDG         1250         1942           74069         02712         RECREATION BLDG         1144         1941	72411	06636	OFF QTR TRANS	7670	1941
73018         00212         REL EDUC FAC         3106         1941           73018         00217         REL EDUC FAC         4720         1941           73018         00219         REL EDUC FAC         4720         1941           73018         02337         REL EDUC FAC         1200         1973           73019         02336         UNIT CHAPEL         3765         1941           72210         06646         UNIT CHAPEL         3765         1941           74015         04065         CIV CLUB FAC         6884         1941           74069         00662         RECREATION BLDG         3663         1943           74069         00680         RECREATION BLDG         1144         1941           74069         00723         RECREATION BLDG         1144         1941           74069         00725         RECREATION BLDG         1144         1941           74069         00730         RECREATION BLDG         1250         1942           74069         02712         RECREATION BLDG         1144         1941	72411	06639	OFF QTR TRANS	7670	1941
73018         00217         REL EDUC FAC         4720         1941           73018         00219         REL EDUC FAC         4720         1941           73018         02337         REL EDUC FAC         1200         1973           73019         02336         UNIT CHAPEL         3765         1941           72210         06646         UNIT CHAPEL         3765         1941           74015         04065         CIV CLUB FAC         6884         1941           74069         00662         RECREATION BLDG         3663         1943           74069         00680         RECREATION BLDG         1144         1941           74069         00723         RECREATION BLDG         1144         1941           74069         00725         RECREATION BLDG         1144         1941           74069         00730         RECREATION BLDG         1250         1942           74069         02712         RECREATION BLDG         1144         1941	72411	06640	OFF QTR TRANS	7670	1941
73018         00219         REL EDUC FAC         4720         1941           73018         02337         REL EDUC FAC         1200         1973           73019         02336         UNIT CHAPEL         3765         1941           72210         06646         UNIT CHAPEL         3765         1941           74015         04065         CIV CLUB FAC         6884         1941           74069         00662         RECREATION BLDG         3663         1943           74069         00680         RECREATION BLDG         1144         1941           74069         00723         RECREATION BLDG         1144         1941           74069         00725         RECREATION BLDG         1144         1941           74069         02712         RECREATION BLDG         1144         1941	73018	00212	REL EDUC FAC	3106	1941
73018         02337         REL EDUC FAC         1200         1973           73019         02336         UNIT CHAPEL         3765         1941           72210         06646         UNIT CHAPEL         3765         1941           74015         04065         CIV CLUB FAC         6884         1941           74069         00662         RECREATION BLDG         3663         1943           74069         00680         RECREATION BLDG         1144         1941           74069         00723         RECREATION BLDG         1144         1941           74069         00725         RECREATION BLDG         1144         1941           74069         02712         RECREATION BLDG         1144         1941	73018	00217	REL EDUC FAC	4720	1941
73019       02336       UNIT CHAPEL       3765       1941         72210       06646       UNIT CHAPEL       3765       1941         74015       04065       CIV CLUB FAC       6884       1941         74069       00662       RECREATION BLDG       3663       1943         74069       00680       RECREATION BLDG       1144       1941         74069       00723       RECREATION BLDG       1144       1941         74069       00725       RECREATION BLDG       1144       1941         74069       02712       RECREATION BLDG       1144       1941	73018	00219	REL EDUC FAC	4720	1941
72210       06646       UNIT CHAPEL       3765       1941         74015       04065       CIV CLUB FAC       6884       1941         74069       00662       RECREATION BLDG       3663       1943         74069       00680       RECREATION BLDG       1144       1941         74069       00723       RECREATION BLDG       1144       1941         74069       00725       RECREATION BLDG       1144       1941         74069       00730       RECREATION BLDG       1250       1942         74069       02712       RECREATION BLDG       1144       1941	73018	02337	REL EDUC FAC	1200	1973
74015       04065       CIV CLUB FAC       6884       1941         74069       00662       RECREATION BLDG       3663       1943         74069       00680       RECREATION BLDG       1144       1941         74069       00723       RECREATION BLDG       1144       1941         74069       00725       RECREATION BLDG       1144       1941         74069       00730       RECREATION BLDG       1250       1942         74069       02712       RECREATION BLDG       1144       1941	73019	02336	UNIT CHAPEL	3765	1941
74069       00662       RECREATION BLDG       3663       1943         74069       00680       RECREATION BLDG       1144       1941         74069       00723       RECREATION BLDG       1144       1941         74069       00725       RECREATION BLDG       1144       1941         74069       00730       RECREATION BLDG       1250       1942         74069       02712       RECREATION BLDG       1144       1941	72210	06646	UNIT CHAPEL	3765	1941
74069       00680       RECREATION BLDG       1144       1941         74069       00723       RECREATION BLDG       1144       1941         74069       00725       RECREATION BLDG       1144       1941         74069       00730       RECREATION BLDG       1250       1942         74069       02712       RECREATION BLDG       1144       1941	74015	04065	CIV CLUB FAC	6884	1941
74069         00723         RECREATION BLDG         1144         1941           74069         00725         RECREATION BLDG         1144         1941           74069         00730         RECREATION BLDG         1250         1942           74069         02712         RECREATION BLDG         1144         1941	74069	00662	RECREATION BLDG	3663	1943
74069       00725       RECREATION BLDG       1144       1941         74069       00730       RECREATION BLDG       1250       1942         74069       02712       RECREATION BLDG       1144       1941	74069	00680	RECREATION BLDG	1144	1941
74069         00730         RECREATION BLDG         1250         1942           74069         02712         RECREATION BLDG         1144         1941	74069	00723		1144	1941
74069 02712 RECREATION BLDG 1144 1941			RECREATION BLDG		
74069 02716 RECREATION RIDG 1144 1941					
	74069	02716	RECREATION BLDG	1144	1941
74069 02834 RECREATION BLDG 1144 1941					
74069 02835 RECREATION BLDG 1144 1941					
74069 02845 RECREATION BLDG 1144 1941					
74069 02856 RECREATION BLDG 1144 1941	74069	02856	RECREATION BLDG	1144	1941

TABLE 2.1.3.3 BUILDINGS THAT NO LONGER EXIST NO ECOS EVALUATED

CATEGORY	BLDG	CATEGORY_DESCR	AREA (SQ FT)	YEAR	_
74069	02907	RECREATION BLDG	1144	1941	•
74069	06643	RECREATION BLDG	2892	1941	
74069	06649	RECREATION BLDG	18899	1941	

TABLE 2.1.3.4 - BUILDINGS THAT ARE NOT LOCATED AT FORT KNOX NO ECOS EVALUATED

CATEGORY	BLDG	CATEGORY/DESCRIPTION	AREA (SQ FT)	YEAR
17130	K0105	APPL INST BLDG	3217	1959
17140	SP002	ARMY RES CENTER	3140	1959
17140	B0001	ARMY RES CENTER	33900	1950
17140	B0003	ARMY RES CENTER	52398	1980
17140	B0100	ARMY RES CENTER	31689	1970
17140	BL002	ARMY RES CENTER	11734	1961
17140	BR001	ARMY RES CENTER	4396	1958
17140	C0300	ARMY RES CENTER	39869	1965
17140	C4076	ARMY RES CENTER	28950	1962
17140	C1003	ARMY RES CENTER	12483	1959
17140	CL002	ARMY RES CENTER	23700	1960
17140	CM002	ARMY RES CENTER	30403	1958
17140	CS001	ARMY RES CENTER	23930	1963
17140	D0001	ARMY RES CENTER	14343	1961
17140	D1026	ARMY RES CENTER	12124	1959
17140	DA001	ARMY RES CENTER	15100	1975
17140	DL002	ARMY RES CENTER	13255	1960
17140	FL004	ARMY RES CENTER	28974	1962
17140	FR002	ARMY RES CENTER	4396	1961
17140	H1052	ARMY RES CENTER	22634	1956
17140	JM001	ARMY RES CENTER	6919	1980
17140	KN002	ARMY RES CENTER	4396	1961
17140	L0001	ARMY RES CENTER	40509	1957
17140	LA003	ARMY RES CENTER	42328	1980
17140	M2002	ARMY RES CENTER	13350	1970
17140	MA002	ARMY RES CENTER	4396	1961
17140	ML002	ARMY RES CENTER	13000	1981
17140	MN001	ARMY RES CENTER	11759	1958
17140	O2052	ARMY RES CENTER	4396	1960
17140	PM003	ARMY RES CENTER	11947	1960
17140	S1006	ARMY RES CENTER	25039	1956
17140	TD001	ARMY RES CENTER	23623	1962
17140	TR002	ARMY RES CENTER	4476	1962
17140	W0001	ARMY RES CENTER	11800	1961
17140	W4051	ARMY RES CENTER	20799	1962
17140	X2001	ARMY RES CENTER	29212	1958
17140	Y2076	ARMY RES CENTER	23652	1951
17140	Z0001	ARMY RES CENTER	13955	1970
21410	B0002	VEH MNT SH ORG	3892	1962
21410	B0101	VEH MNT SH ORG	6298	1970
21410	BL003	VEH MNT SH ORG	2519	1961
21410	BR012	VEH MNT SH ORG	1325	1958
21410	C0077	VEH MNT SH ORG	8882	1919
21410	C0301	VEH MNT SH ORG	7498	1965
21410	C4077	VEH MNT SH ORG	6256	1962
21410	CI004	VEH MNT SH ORG	3690	1959
21410	CL003	VEH MNT SH ORG	3700	1960
21410	CM003	VEH MNT SH ORG	6009	1958
£171U	G141005	72 m. 1 0.1 0.10		<b>-</b>

TABLE 2.1.3.4 - BUILDINGS THAT ARE NOT LOCATED AT FORT KNOX NO ECOS EVALUATED

CATEGORY	BLDG	CATEGORY/DESCRIPTION	AREA (SQ FT)	YEAR
21410	CS002	VEH MNT SH ORG	3800	1963
21410	D0002	VEH MNT SH ORG	2587	1972
21410	D1027	VEH MNT SH ORG	3065	1960
21410	DA002	VEH MNT SH ORG	2937	1975
21410	DL003	VEH MNT SH ORG	5529	1960
21410	FL005	VEH MNT SH ORG	12964	1962
21410	FR003	VEH MNT SH ORG	1325	1961
21410	FT187	VEH MNT SH ORG	3865	1975
21410	H1053	VEH MNT SH ORG	3716	1960
21410	KN003	VEH MNT SH ORG	1325	1959
21410	L0002	VEH MNT SH ORG	6092	1957
21410	LM002	VEH MNT SH ORG	2656	1977
21410	M2003	VEH MNT SH ORG	0	1979
21410	MA003	VEH MNT SH ORG	1325	1961
21410	ML003	VEH MNT SH ORG	4300	1981
21410	MN011	VEH MNT SH ORG	2656	1959
21410	O2053	VEH MNT SH ORG	1325	1960
21410	PM004	VEH MNT SH ORG	2640	1960
21410	RS011	VEH MNT SH ORG	14440	1946
21410	S1007	VEH MNT SH ORG	6097	1956
21410	SP003	VEH MNT SH ORG	2656	1959
21410	TD002	VEH MNT SH ORG	3997	1962
21410	TR003	VEH MNT SH ORG	1325	1962
21410	W0002	VEH MNT SH ORG	2640	1960
21410	W4052	VEH MNT SH ORG	14400	1946
21410	X2002	VEH MNT SH ORG	6097	1956
21410	Y2077	VEH MNT SH ORG	6656	1951
21420	C0107	VEH MNT SH ORG	1312	1898
21420	LA004	VEH MNT SH ORG	4951	1980
21470	FL003	OIL STO BLDG	127	1962
21910	C0076	FE MAINT SHOP	2910	1892
21910	C0104	FE MAINT SHOP	840	1910
21910	C0105	FE MAINT SHOP	1500	1894
72140	P0904	CV DORMITORY	1600	1942
72321	P0900	DET LATRINE BDG	685	1942
72321	P1256	DET LATRINE BDG	564	1942
72321	P1266	DET LATRINE BDG	564	1942
72321	P1267	DET LATRINE BDG	864	1942
72321	P1268	DET LATRINE BDG	864	1942
72321	P1269	DET LATRINE BDG	864	1942
72321	P1389	DET LATRINE BDG	864	1942
72321	P1391	DET LATRINE BDG	864	1942
72321	P1423	DET LATRINE BDG	864	1942
72321	P1488	DET LATRINE BDG	864	1942
72321	P1499	DET LATRINE BDG	864	1942
72321	P1614	DET LATRINE BDG	864	1942
72321	P1712	DET LATRINE BDG	864	1942
73017	P1003	POST CHAPEL	3826	1942

TABLE 2.1.3.4 - BUILDINGS THAT ARE NOT LOCATED AT FORT KNOX NO ECOS EVALUATED

CATEGORY	BLDG	CATEGORY/DESCRIPTION	AREA (SQ FT)	YEAR
74046	P1738	OPEN DIN CONS	36515	1942
74050	C0103	EXCHANGE BRANCH	8135	1896
74069	P0910	RECREATION BLDG	4720	1942
74069	P0911	RECREATION BLDG	4720	1942
74069	P1021	RECREATION BLDG	4720	1942
74069	P1022	RECREATION BLDG	4720	1942
74069	P1023	RECREATION BLDG	4720	1942
74069	P1024	RECREATION BLDG	4720	1942

TABLE 2.1.3.5 - NON-APPROPRIATED FUND FACILITIES NO ECOS EVALUATED

CATEGORY	BLDG	CATEGORY/DESCRIPTION	AREA (SQ FT)	YEAR
74050	00103	EXCHANGE BRANCH	8135	1896
74050	00708	EXCHANGE BRANCH	4736	1987
74050	01490	EXCHANGE BRANCH	3929	1957
74050	02013	EXCHANGE BRANCH	12188	1988
74050	02318	EXCHANGE BRANCH	7180	1938
74050	04770	EXCHANGE BRANCH	4810	1958
74050	04991	EXCHANGE BRANCH	2580	1960
74050	05929	EXCHANGE BRANCH	4783	1969
74050	06585	EXCHANGE BRANCH	8440	1957
74050	06703	EXCHANGE BRANCH	6683	1941
74050	07037	EXCHANGE BRANCH	3854	1941
74051	00126	EXCHANGE CAFE	16200	1974
74052	01395	EXCH SVC STA	5573	1954
74052	01611	EXCH SVC STA	600	1975
74052	04990	EXCH SVC STA	2184	1960
74053	00127	EXCH MAIN RETL	83940	1974
74055	00051	EXCH WAREHOUSE	10110	1954
74055	00052	EXCH WAREHOUSE	9030	1954
74055	02198	EXCH WAREHOUSE	1440	1940
74056	00263	EXCH SVC OUTLET	2430	1941
74056	01328	EXCH SVC OUTLET	13102	1930
74056	02012	EXCH SVC OUTLET	3317	1987
74056	02320	EXCH SVC OUTLET	7180	1938
74056	02830	EXCH SVC OUTLET	1450	1942
74056	07040	EXCH SVC OUTLET	1296	1941

# 2 METHODS AND APPROACH

FY94S WATER CONSERVATION STUDY (WATER AND ENERGY), FT. KNOX, KY

#### 2.2 CALCULATIONS

Energy calculations were performed using computerized techniques. Due to the large volume of calculations to be performed, standardized spreadsheets and procedures were developed. This assured consistent results and uniformity of quality in all of the calculations performed.

### 2.2.1 Baseline Water and Energy Consumption

The annual potable water production for Fort Knox from July 1993 through June 1994 was 1,421,100,000 gallons. The volume of sewage treated was 1,055,500,000. The net volumetric difference between potable water produced and sewage treated is 365,600,000 gallons more of potable water produced. Factors that affect the net differences are irrigation, evaporation, and storm water infiltration. The annual rainfall corresponding to the same period came to 50 inches. It is quite possible that the metering methods are not accurate.

The following sections will describe the method for calculating the baseline energy consumption for each of the ECOs.

# 2.2.1.1 Baseline Water and Energy Consumption

The baseline water and energy consumption for each ECO was calculated using a LOTUS123 spreadsheet. The water consumption was modeled using industry standards, field measurements and population data at Fort Knox. The information necessary to calculate the baseline include the following:

- 1. Category Codes
- 2. Square Footage and Age
- 3. Occupancy Schedule
- 4. Plumbing Fixture Count
- 5. Water Flow Measurements
- 6. Fuel Sources

The above information was obtained during the field survey.

## 2.2.2 ECO Water and Energy Consumption

The following sections describe how the water and energy savings for each ECO was calculated.

## 2.2.2.1 ECO Water and Energy Consumption: ECO-1 Spring Loaded Faucets

The water and energy savings are calculated using the differential between the measured existing flow rate and the new flow rate. The new flow rate is based upon manufacturer data. American Society of Heating, Refrigerating and Air-conditioning Engineers and American Society of Plumbing Engineer standards were used to estimate frequency of demand.

## 2.2.2.2 ECO Water and Energy Consumption: ECO-2 Faucet Aerators

The water and energy savings are calculated using the differential between the measured existing flow rate and the new flow rate. The new flow rate was obtained from manufacturer data. The new flowrate is 50% of the existing measured flowrate. American Society of Heating, Refrigerating and Air-conditioning Engineers standards were used to calculate daily consumption. Building occupancy data was used in the calculations.

# 2.2.2.3 ECO Water and Energy Consumption: ECO-2FH Faucet Aerators (Family Housing)

The water and energy savings are calculated using the differential between the measured existing flow rate and the new flow rate. The new flow rate was obtained from manufacturer data; the new flowrate is 50% of the existing measured flow rate. American Society of Heating, Refrigerating and Air-conditioning Engineers standards were used to calculate daily consumption. Family housing population data was used in the calculations.

# 2.2.2.4 ECO Water and Energy Consumption: ECO-3 Flush Valve Retrofits for Water Closets

The water and savings are calculated using the differential between the existing flow rate and the new flow rate. The existing flush valve flow rate of 4.5 gallons per flush, or 17 liters per flush, was determined in the field. The new flush valve flow rate of 3.5 gallons per flush, or 13.2 liters per flush, is based upon manufacturer performance data. American Society of Plumbing Engineers standards were used to estimate frequency of demand and daily consumption. Building occupancy data was used in the calculations.

# 2 METHODS AND APPROACH

FY94S WATER CONSERVATION STUDY (WATER AND ENERGY), FT. KNOX, KY

# 2.2.2.5 ECO Water Consumption: ECO-3FH Water Closet Replacements (Family Housing)

The water and savings are calculated using the differential between the existing flow rate and the new flow rate. The existing flow rate was determined in the field to be 5 gallons per flush, or 19 liters per flush. The new flow rate was based upon manufacturer data of 1.6 gallons per flush, or 6 liters per flush. American Society of Plumbing Engineers standards were used to estimate frequency of demand. Family housing population data was used in the calculations. Five flushes per day, per occupant, were used.

## 2.2.2.6 ECO Water Consumption: ECO-4 Flush Valve Retrofits for Urinals

The water and savings are calculated using the differential between the existing flow rate and the new flow rate. The existing flow rate of 1.5 gallons per flush, or 5.7 liters per flush, was measured in the field. The new flow rate of 1.0 gallons per flush, or 3.8 liters per flush, is based upon manufacturer performance data. American Society of Plumbing Engineers standards were used to estimate frequency of demand. Building occupancy data was used in the calculations.

# 2.2.2.7 ECO Water and Energy Consumption: ECO-6 Dining Facilities (Kitchen) Retrofits

The water and energy savings are calculated using the differential between the measured existing flow rate and the new flow rate. The retrofit evaluated consisted of installing aerators on the kitchen sinks that were not used for pot filling. The aerators were assumed to decrease the flow rate by 50% per manufacturer data. American Society of Heating, Refrigerating and Air-conditioning Engineers standards were used to estimate frequency of demand.

# 2.2.2.8 ECO Water and Energy Consumption: ECO-7 Golf Course Irrigation

The potable water meter readings were used to determine the annual consumption. The cost to switch to a raw water well supply was calculated using calculated pump run times and brake horsepower. The calculations were based upon a well depth of 200 feet and a casing size of six inches. The estimated well pump horse power is 75 horsepower per well.

# 2.2.2.9 ECO Water and Energy Consumption: ECO-8 Post Laundry Retrofits

The steam loss from failed steam traps was calculated using Napiers equation and boiler plant operating logs.

FY94S WATER CONSERVATION STUDY (WATER AND ENERGY), FT. KNOX, KY

2.2.2.10 ECO Water and Energy Consumption: ECO-9 Water Treatment Plant's and Well Field's Motors and Pumps

The existing water pump and motor efficiencies were evaluated. The water pumps were found to be very efficient. However, the pump motors were not high efficiency motors. The electrical savings were calculated for replacing the existing motors with high efficiency motors.

2.2.2.11 ECO Water and Energy Consumption: ECO-10 Manhole Sump Pump Repairs (Heating) Life Cycle Cost Analyses

The energy savings were determined by calculating the differential piping heat loss between piping in a flooded manhole and a dry manhole.

2.2.2.12 ECO Water and Energy Consumption: ECO-11 Sensor Controls for Faucets

The water and energy savings are calculated using the differential between the measured existing flow rate and the new flow rate. American Society of Heating, Refrigerating and Air-conditioning Engineers standards were used to estimate frequency of demand.

2.2.2.13 ECO Water and Energy Consumption: ECO-12 Water Heater Insulation Blankets (Family Housing)

The energy savings were determined by calculating the differential in heat loss between the water heater with, and without, the insulating blanket.

2.2.2.14 ECO Water Consumption: ECO-16 Cooling Tower Water Treatment

The water savings were calculated using the differential in blowdown rate between the existing chemical water treatment system and a new ozone water treatment system. The existing blowdown rate was determined in the field and is based upon 3 cycles of concentration. The cycles of concentration for the new ozone treatment system is calculated to be 6 cycles. The savings is the differential in the annual water blowdown losses and the cost of chemicals.

2.3 ECOs REJECTED AFTER ANALYSIS

ECOs 9, 11, 12, and 16 were rejected due to insufficient savings after calculations were completed.

# FY94S WATER CONSERVATION STUDY (WATER AND ENERGY), FT. KNOX, KY

### 2.3.1 ECO-9 Water Treatment Plants and Wellfield Motors and Pumps

The water treatment plant and well field motors were evaluated as ECO-9. Savings are based on the installation of high efficiency motors. The energy savings that result are not great enough to justify replacement of all motors at this time. It is recommended to install higher efficiency motors when the existing motors need to be replaced.

The LCCID report calculation sheet and cost estimate for ECO-9 are in Appendix D.

### 2.3.2 ECO-11 Sensor Controls for Faucets

Sensor controls for faucets, urinals and toilets were evaluated for two barracks. It is evident that the savings do not justify the cost to install these systems. Other ECOs have higher SIR and lower payback periods so sensors were not evaluated for all buildings.

The water savings is assumed to be equal to that calculated for ECO-1, ECO-3, and ECO-4. The LCCID reports and cost estimates are in Appendix D.

### 2.3.3 ECO-12 Water Heater Insulation Blankets

The addition of an insulation blanket on hot water heaters in family housing units does not result in significant energy savings. Most water heaters are well insulated and additional insulation does not reduce heat loss significantly. This ECO was evaluated for two family housing units. It is evident that the payback period and SIR are very poor, therefore no other buildings were evaluated for this ECO.

The LCCID reports, calculation sheets, and cost estimates for this ECO are in Appendix D.

## 2.3.4 ECO-16 Cooling Tower Water Treatment

The water and chemical savings calculated for switching from chemical water treatment to ozone water treatment were insufficient to achieve a payback of less than ten years. The cooling tower operates only six months a year. If the tower operated year round, the project may have had payback of less than ten years.

The calculation sheets for this ECO are in Appendix D.

FY94S WATER CONSERVATION STUDY (WATER AND ENERGY), FT. KNOX, KY

### 2.4 COST ESTIMATES

The cost estimates for the ECOs were obtained using a variety of sources. This section explains how each part of the cost estimate was determined.

The initial cost for each ECO is the sum of the construction costs for the project and the project costs. The construction costs include all costs in materials, labor, and contractor's overhead and profit. The project costs include supervision, inspection, and overhead (SIOH) for the project and the project design costs.

### 2.4.1 Construction Costs

The construction costs for each ECO were estimated using MeansData for Windows Spreadsheets, Version 2.0a, cost estimating software. Prices not available in the accompanying database were obtained using a combination of sources. These sources include the following:

- Local suppliers and vendors
- Systems Corp Estimating Data

All pricing has been adjusted, where applicable, to represent the labor costs in the Fort Knox labor market. The construction cost estimates have been prepared to include a reasonable level of detail for each ECO calculated. The construction costs include an additional contingency and 10% profit. A minimum contingency of 10% was used, higher contingencies were used on some projects.

### 2.4.2 Project Costs

The project costs for each ECO include the cost of supervision, inspection, and overhead required to complete the project. A value of 5.0% of the construction cost has been used for the SIOH. Also included in the project costs is the cost to design each ECO. The design cost has been included at a fixed value of 5.0% of construction cost. This approach assures consistent values have been used for the project costs, allowing for combination of ECOs into larger projects without the need to adjust these values.

### 2.5 ECO LIFE CYCLE COSTS

The life cycle cost analyses for the ECOs are a combination of energy costs, investment costs, maintenance costs, and replacement costs. Each of these components may, or may not, be significant

METHODS AND APPROACH
FY94S WATER CONSERVATION STUDY (WATER AND ENERGY), FT. KNOX, KY

factors in determining the life cycle cost of the project. Each of these cost components has been evaluated for each ECO to determine the contribution, if any, to the life cycle cost of the project.

The life cycle costs were calculated using the computer program Life Cycle Costing in Design (LCCID) as required in the Scope of Work.

### 2.5.1 Energy and Water Costs

Energy costs for each type of fuel used in the facilities included in this project were obtained from the installation and through the Defense Energy Information System (DEIS). The costs were obtained along with the amount of energy used for FY93. Average annual water, sewage and energy costs per unit were calculated. Electricity, fuel oil and natural gas are the only sources of energy related to the study.

	Cost/MBtu
Electric Fuel Oil Natural Gas	= \$0.02505/KWH or \$25.05/MWH = \$5.05/MBtu or \$17.15/MWH = \$3.10/MBtu or \$10.51/MWH
	Cost/Kgal
Water Sewage	= \$0.9409/KGAL or \$0.249/Kliter = \$0.6292KGAL or \$0.160/Kliter

## 2.5.2 Maintenance and Replacement Costs

The maintenance and operating costs/savings for each ECO were calculated, where applicable. First considered was whether the annual recurring (maintenance and operation) non-energy costs would significantly change as a result of each ECO. These values are sometimes unjustifiably manipulated to produce the desired results for the project economic analysis. Therefore, it was typically assumed maintenance and operation activities will continue at the same rate as before the project. However,

METHODS AND APPROACH
FY94S WATER CONSERVATION STUDY (WATER AND ENERGY), FT. KNOX, KY

readily identifiable differences, such as boiler maintenance, have been included. The estimated costs were obtained from the Means Facilities Maintenance and Repair Costs Data, 1994. These costs are shown on each corresponding life cycle summary sheet included in this report.

The replacement costs (non-energy non-annual recurring cost) for each ECO will be evaluated in the same manner as non-energy annual recurring cost. An example of this type of cost item is the replacement of the cartridge in spring-loaded faucets.

It is the policy of Systems Corp to be conservative when estimating these more subjective cost components--which, if improperly evaluated, could result in inappropriate project qualification and funding decisions.

# 3 ECIP PROJECT 1

T 1 FY94S Water Conservation Study (Water and Energy), Ft. Knox, KY

This section contains the project description and the DD1391 forms for ECIP Project FH-1, Family Housing Water Conservation Phase I improvements to 328 Family Housing Units. Two lists of the buildings included in the project follow the DD1391 forms. The first list includes all buildings considered in the project in numerical order. The second list shows which buildings were used to model unsurveyed buildings. Following these lists are the LCCID report and the cost estimate for the proposed project. Calculation sheets for the individual buildings follow the project cost estimate. Below is a detailed index of the information included in this section.

DD1391 Form
Table 3.1 ECIP FH-1 - Family Housing
Table 3.2 Buildings Modeled by Surveyed Buildings
Project LCCID Report
Cut Sheets/Product Information
Project Cost Estimate 3-13
Building Calculation Sheets

DATE:

22 December 1994

PROJECT NO .:

ECIP-FH1

PROJECT TITLE:

Family Housing Water Conservation Phase I

INSTALLATION:

Fort Knox

LOCATION:

Kentucky

### PRIMARY FACILITY

Water Closets and Faucet Aerators

\$887,000

ESTIMATED CONTRACT COST	\$733,636
CONTINGENCY PERCENT (10%)	73,364
SUBTOTAL	807,000
SUPERVISION, INSPECTION & OVERHEAD (5%)	40,350
DESIGN COST	40,350
TOTAL REQUEST	887,700
TOTAL REQUEST (ROUNDED)	\$888,000

Replace water closets in 1354 family housing units with water saving, 6 liters (1.6 gallons) per flush water closets, and install faucet aerators in 328 family housing units. All water closets will be of the flush tank type. The project will significantly reduce potable water consumption and sanitary waste production.

DATE:

22 December 1994

PROJECT NO.:

ECIP-FH1

PROIECT TITLE:

Family Housing Water Conservation Phase I

INSTALLATION:

Fort Knox

LOCATION:

Kentucky

### PROJECT:

Replace water closets in 1354 family housing units with water saving, 6 liters (1.6 gallons) per flush water closets, and install faucet aerators in 328 family housing units.

### **REQUIREMENTS:**

Fort Knox utilizes inefficient outdated water closets in its family housing units. The existing water closets consume significantly more water and generate greater quantities of sanitary waste per flush than the new standard water saving water closet. The existing inefficient systems place greater demand on the water table, water treatment plant and waste treatment plant. The U.S. Army Corp of Engineers, Louisville District, contracted an Energy Engineering Analysis Program (EEAP) Water Conservation Study of the Post. The study identified energy and water conservation opportunities. Life cycle cost analysis was performed on each opportunity to determine its discounted savings-to-investment ratio (SIR) and estimated payback period. This project has a SIR of 2.61 and a simple payback period of 5.73 years. The project exceeds the minimum requirements of an SIR greater than 1.25 and a simple payback of less than 10 years.

### **CURRENT SITUATION:**

The family housing units at Ft. Knox have inefficient water closets and lack aerators at many sinks. The family housing units consume more water and generate more sanitary waste than is necessary. The new water closets and aerators will greatly reduce the water consumption and waste generated.

### IMPACT IF NOT PROVIDED:

If this project is not implemented, 1354 family housing units will continue to consume more water and generate more waste than necessary. The U.S. Army will fail to realize an estimated \$155K in annual savings (FY95\$) and a total discounted savings of \$2.32M during the twenty year life of the project.

# ADDITIONAL:

A life cycle cost analysis was performed on the project. The project will realize water savings of over 2.6 times the initial investment cost and will pay for itself in less than 5.8 years.

Ft. Knox is not on the list of installations considered for closure or realignment.

DATE:

22 December 1994

PROJECT NO .:

ECIP-FH1

PROJECT TITLE:

Family Housing Water Conservation Phase I

INSTALLATION:

Fort Knox

LOCATION:

Kentucky

SECTION 11 - ECONOMIC ANALYSIS DATA

# 11D ECONOMIC JUSTIFICATION SUMMARY

This water conservation project is recommended for funding. A life cycle cost analysis was performed on each portion of this project and on the overall project. The overall project will realize water savings of over 2.6 times the initial investment cost and will pay for itself in less than 5.8 years.

TABLE 3.1 ECIP FH-1 - FAMILY HOUSING

<del></del>			
414 B	443 A	1201	1436 A
414 A	447	1202	1436 B
415 A	448	1203	1438 B
415 B	449 B	1204	1438 A
416 A	449 A	1401	1439 A
416 B	450	1402	1439 B
417 A	451 A	1403	1440 A
417 B	451 B	1404	1440 B
418 A	452 A	1405	1441 B
418 B	452 B	1406	1441 A
419	453 B	1408	1442 A
419 B	453 A	1409	1442 B
420 B	454 A	1410	1443 B
420 A	454 B	1411 A	1443 A
421 B	455 A	1411 B	1444 A
421 A	455 B	1412	1444 B
422 A	456 B	1413 A	1444 A
422 B	456 A	1413 B	1445 B
423	457 B	1416 A	1446 B
424	457 A	1416 B	1446 A
425	458 B	1417	1447
426	458 A	1418 A	1453 B
427	459 A	1419 B	1453 A
431 A	459 B	1419 A	1454 B
431 B	460 B	1420 A	1454 A
432 A	460 A	1420 B	1455 B
432 B	461 A	1422 A	1455 A
434 B	461 B	1422 B	1457 A
434 A	462 B	1423	1457 B
435 A	462 A	1424 B	1458 B
435 B	1004	1424 A	1458 B
436 A	1120	1426	1458 A
436 B	1122	1427	1458 A
437 A	1125 A	1429 B	1459 B
437 B	1125 B	1429 A	1459 A
438 B	1126 A	1430 A	1460 A
438 A	1126 B	1430 B	1460 B
439 A	1127 A	1431 B	1461 A
439 B	1128 A	1431 A	1461 B
440 B	1128 B	1432	1462 A
440 A	1132	1432 B	1462 B
441 A	1133	1433 B	1463 A
441 B	1134	1433 A	1463 B
442 A	1135	1434 A	1464 B
442 B	1136	1434 B	1464 A
443 B	1200	1435 A	1465 A
T+3 D	1200	TTJJ XL	110011

		4000 5	7511
1465 B	4257	4332 B	7511 A
1466 B	4258	4332 A	7511 B
1466 A	4259	4333 A	7512 A
4016	4260	4333 B	7512 B
4026	4261	4334 A	7513 A
4026	4262	4334 B	7513 B
4027	4263	4335 B	7514 A
4029	4264	4335 A	7514 B
4030	4265	4336 B	7515 A
4031	4266	4336 A	7515 B
4032	4267	4338 B	7516 B
4033	4268	4338 A	7516 A
4034	4269	4339 B	7518 B
4035	4270	4339 A	7518 A
4036	4271	4340 B	7518 B
4037	4272	4341 B	7519 A
4038	4273	4341 B	7519 B
4039	4274	4341 A	7520 A-H
4040	4276	4342 A	7521 B
4041	4277	4342 B	7521 A
4043	4278	4343 A	7522 B
4044	4279	4343 B	7522 A
4045	4280	4349	7523 B
4046	4281	4351	7523 A
4047	4282	4354	7523 B
4048	4283	4356	7524 A-H
4049	4284	4357	7525 A
4086	4285	4358	7526 B
4087	4286	4359	7526 A
4088	4287	4360	7527 B
4089	4288	4361	7527 A
4090	4301 A	4362 A	7528 A
4091	4301 B	4362 B	7528 B
4092	4303 A	4363 B	7529 A
4093	4303 B	4363 A	7529 B
4094	4305 A	4363	7530 A
4095	4305 B	4364 B	7530 B
4096	4306 A	4364 A	7531 A
4098	4306 B	4365 A	7531 B
4099	4307 B	4365 B	7532 A
4100	4307 A	4367	7532 B
4102	4308 A	4369	7533 A
4103	4308 B	5054	7533 B
4105	4310 A	5314	7534 B
4106	4330 B	7480 A-H	7534 A
4107	4330 A	7493 A-H	7535 A
4113	4331 B	7510 A	7535 B
4114	4331 A	7510 B	7536 A
7117	TJJI IX	, , , , , , , , , , , , , , , , , , , ,	100011

( <del></del>		·	India : -
7536 B	7556 B	7874 B	9045 A-D
7537 B	7557 A	7874 A	9046 A-H
7537 A	7557 B	7876 B	9047 A-H
7538 A	7558 A	7876A	9048 A, C-H
7538 B	7558 B	7878A	9049 A-H
7539 A	7559 A	7878B	9052 А-Н
7539 B	7559 B	7801 B - 7820 B	9053
7540 B	7740 A-H	7801 A - 7868 A	9053 A, C-H
7540 A	7744 A-G	7822 B - 7833 B	9054 A-G
7541 A	7745 A-H	7835 B - 7860 B	9055 A-H
7541 B	7746 A-D	7862 B - 7872 B	9056 A-D
7542 B	7747 B-G	7870 A - 7872 A	9057 A-H
7542 A	7747 A-H	7880 B - 7888 B	9058 A-H
7543 A	7748 A-G	7880 A - 7888 A	9060 A-D
7543 B	7749 A-H	7980 A-H	9109 A-H - 9111 A-H
7544 A	7749 B-G	7982 A-D	9110 A-H
7544 B	7750 D	7983 A-D	9112 A-D
7545 A	7750 B-C	7984 A-H	9113 A-H
7545 B	7750	7985 A-H	9114 A-D
7546 A	7751 B	7987 A-D	9115 A-H
7546 B	7751 A-D	7989 A-H	9115 A-H
7547 A	7751	7991 A-H	9116 A-D
7547 B	7753 A-G	9019	9117 A-H
7548 A	7754 A-G	9025 A-G	9118 A-D
7548 B	7755 A-H	9026 A-H	9119 A-H
7549	7756 A-H	9028 A-H	9120 A - 9140 A
7550 A	7757 A-D	9030 A-H	9120 B
7550 B	7758 A-H	9031 A-D	9122 B - 9140 B
7551 A	7759 A-D	9032 A-H	9141
7551 B	7760 A-H	9032 A-H	9142 A - 9163 A
7552 A	7761 B-C	9036 A-H	9142 B - 9163 B
7552 B	7761 A-D	9036 A-H	9206
7553 A	7762 A-D	9037 A-D	9211
7553 B	7762 B-C	9038 A-H	9222
7554 A	7770 A-D	9039 A-H	11127 B
7554 B	7770 B-C	9040 A-C	13435 B
7555 A	7772 A-H	9041 A-H	43460 A
7555 B	7821	9042 A-H	
7556 A	7869	9044 A-H	
		•	•

TABLE 3.2 BUILDINGS MODELED BY SURVEYED BUILDINGS

BUILDINGS SURVEYED AND	BUILDINGS ASSUMED TYPICAL OF SURVEYED BUILDINGS
CALCULATED	
1426A	1122, 1132, 1133, 1134, 1135, 1136, 1125A, 1126A, 1127A, 1128A, 1401, 1402, 1411A, 1413A, 1416A, 1419A, 1420A, 1422A, 1424A, 1429A
1426B	1125B, 1126B, 1127B, 1128B, 1403, 1404, 1405, 1406, 1408, 1409, 1410, 1411B, 1412, 1413B, 1416B, 1417, 1419B, 1420B, 1422B, 1423, 1424B, 1427, 1429B, 1447
1432A	1120, 1200, 1201, 1202, 1203, 1204, 1430A & B, 1431A & B, 1432B, 1433A & B, 1434A & B, 1435A & B, 1436 A & B, 1438A & B, 1439A & B, 1440A & B, 1441A & B, 1442A & B, 1443A & B, 1444A & B, 1445A & B, 1446A & B, 1453A & B, 1454A & B, 1455A & B, 1456A & B, 1457A & B, 1458A & B, 1459A & B, 1460A & B, 1461A & B, 1462A & B, 14563A & B, 1464A & B, 1465A & B, 1466A & B, 9206, 9222
4358	4044, 4045, 4046, 4047, 4048, 4049, 4086, 4087, 4088, 4089, 4090, 4091, 4092, 4093, 4094, 4095, 4113, 4114, 415, 4116, 4117, 4118, 4119, 4121, 4326, 4328, 4337, 4349, 4351, 4354, 4356, 4357, 4359, 4360, 4361, 4367, 4369, 5054
4041	4027, 4028, 4032, 4035, 4037, 4100, 4103, 4106, 4107
4096	4026, 4029, 4030, 4031, 4033, 4034, 4036, 4038, 4039, 4040, 4043, 4098, 4099, 4102, 4105
4270	4257, 4258, 4259, 4260, 4261, 4262, 4263, 4264, 4265, 4266, 4267, 4268, 4269, 4271, 4272, 4273, 4274, 4276, 4277, 4278, 4279, 4280, 4281, 482, 4283, 4284, 4285, 4286, 4287, 4288
1363	4301A & B, 4303A & B, 4305A & B, 4306A & B, 4307A & B, 4308A & B, 4310A & B, 4330A & B, 4331A & B, 4332A & B, 4333A & B, 4334A & B, 4335A & B, 4336A & B, 4338A & B, 4339A & B, 4340A & B, 4341A & B, 4342A & B, 4343A & B, 4362A & B, 4363A & B, 4364A & B, 4365A & B,
419	414A, 415A, 416A, 417A, 418A, 420A, 421A, 422A, 431A, 432A, 434A, 435A, 436A, 437A, 438A, 439A, 440A,441A, 442A, 443A
450A	423, 424, 425, 426, 427, 447, 448, 449A, 451A, 452A, 453A, 454A, 455A, 456A, 457A, 458A, 459A, 460A, 461A, 462A, 1004
450B	414B, 415B, 416B, 417B, 418B, 419B, 420B, 421B, 422B, 431B, 432B, 434B, 435B, 436B, 437B, 438B, 439B, 440B, 441B, 442B, 443B, 449B, 451B, 452B, 453B, 454B, 455B, 456B, 457B, 458B, 459B, 460B, 461B, 462B, 4016

7549A	7510A, 7511A, 7512A, 7513A, 7514A, 7515A, 7516A, 7518A, 7519A, 7520A-H, 7521A, 7522A, 7523A, 7524A-H, 7525A, 7526A, 7527A, 7528A, 7529A, 7530A, 7531A, 7532A, 7533A, 7534A, 7535A, 7536A, 7537A, 7538A, 7539A, 7540A, 7541A, 7542A, 7543A, 7544A, 7545A, 7546A, 7547A, 7548A, 7550A, 7551A, 7552A, 7553A, 7554A, 7555A, 7556A, 7557A, 7558A, 7559A
7549B	7510B, 7511B, 7512B, 7513B, 7514B, 7515B, 7516B, 7518B, 7519B, 7521B, 7522B, 7523B, 7525B, 7526B, 7527B, 7528B, 7529B, 7530B, 7531B, 7532B, 7533B, 7534B, 7535B, 7536B, 7537B, 7538B, 7539B, 7540B, 7541B, 7542B, 7543B, 7544B, 7545B, 7546B, 7547B, 7548B, 7550B, 7551B, 7552B, 7554B, 7555B, 7556B, 7557B, 7558B, 7559B
7750	7744A-G, 7746A-D, 7747A & H, 7749A & H, 7750D, 7751A & D, 7757A-D, 7759A-D, 7761A & D, 7762A & D, 7770A & D, 7982A-D, 7983A-D, 7987A-D,
7751	7480A-H - 7493A-H, 7740A-H, 7745A-H, 7747B-G, 7748A-G, 7749B-G, 7750B & C, 7751B, 7753A-G, 7754A-G, 7755A-H, 7756A-H, 7758A-H, 7760A-H, 7761B & C, 7762B & C, 7770B & C, 7772A-H, 7980A-H, 7984A-H, 7985A-H, 7989A-H, 7991A-H, 9019, 9211
5314	9031A-D, 9037A-D, 9040A-C, 9045A-D, 9056A-D, 9060A-D, 9112A-D, 9114A-D, 9116A-D, 9118A-D
5475	9025A-G, 9026A-H - 9030A-H, 9032A-H - 9036A-H, 9038A-H, 9039A-H, 9042A-H - 9044A-H, 9046A-H, 9047A-H, 9049A-H - 9052A-H, 9054A-G, 9055A-H, 9057A-H, 9058A-H, 9109A-H - 9111A-H, 9113A-H, 9115A-H, 9117A-H, 9119A-H
7821	7801B - 7820B, 7822B - 7833B, 7835B - 7860B, 7862B - 7872B, 7874B, 7876B, 7878B, 7880B - 7888B
7869	7801A - 7868A, 7870A - 7872A, 7874A, 7876A, 7878A, 7880A - 7888A
9053	9028А-Н, 9032А-Н, 9036А-Н, 9041А-Н, 9048А & С-Н, 9053А & С-Н, 9110А-Н, 9115А-Н
9141A	9120A - 9140A, 9142A - 9163A
9141B	9120B, 9122B - 9140B, 9142B - 9163B

STUDY: ECIP-FH1 LIFE CYCLE COST ANALYSIS SUMMARY LCCID FY95 (92) ENERGY CONSERVATION INVESTMENT PROGRAM (ECIP) INSTALLATION & LOCATION: FT KNOX REGION NOS. 4 CENSUS: 3 PROJECT NO. & TITLE: ECIP-FH1 FAMILY HOUSING PROJECT 1 FISCAL YEAR 1995 DISCRETE PORTION NAME: WATER ANALYSIS DATE: 12-28-94 ECONOMIC LIFE 20 YEARS PREPARED BY: DERRINGTON 1. INVESTMENT A. CONSTRUCTION COST \$ 807000. \$ 40350. B. SIOH \$ C. DESIGN COST 40350. D. TOTAL COST (1A+1B+1C) \$ 887700. E. SALVAGE VALUE OF EXISTING EQUIPMENT \$ 0. F. PUBLIC UTILITY COMPANY REBATE 887700. G. TOTAL INVESTMENT (1D - 1E - 1F) 2. ENERGY SAVINGS (+) / COST (-) DATE OF NISTIR 85-3273-X USED FOR DISCOUNT FACTORS OCT 1994 UNIT COST SAVINGS ANNUAL \$ DISCOUNT DISCOUNTED MWH/YR(2) SAVINGS(3) FACTOR(4) SAVINGS(5) \$ / MWH(1) FUEL 0. 0. 374. 0. 0. 15.08 A. ELECT \$ 46.40 0. 0. 0. \$ 0. 0. \$ 0. 374. \$ 3931. 0. \$ 0. 0. \$ 0. 374. \$ 3931. 0. B. DIST \$ .00 C. RESID \$ .00 0. 18.57 0. 21.02 18.58 D. NAT G \$ 10.51 73033. E. COAL \$ .00 F. PPG \$ .00 16.83 0. F. PPG 17.38 0. Ŏ. 14.88 0. M. DEMAND SAVINGS 73033. N. TOTAL 3. NON ENERGY SAVINGS(+) / COST(-) 106686. A. ANNUAL RECURRING (+/-) (1) DISCOUNT FACTOR (TABLE A) 14.88 1587488. (2) DISCOUNTED SAVING/COST (3A X 3A1) B. NON RECURRING SAVINGS(+) / COSTS(-) SAVINGS(+) YR DISCNT DISCOUNTED
COST(-) OC FACTR SAVINGS(+) SAVINGS(+)/ ITEM (3) (1) (2) COST(-)(4) 10 .74 \$ 887700. 656898. 1. REPLACEMENT \$ 887700. 656898. d. TOTAL C. TOTAL NON ENERGY DISCOUNTED SAVINGS(+)/COST(-)(3A2+3Bd4)\$ 2244386. 4. FIRST YEAR DOLLAR SAVINGS 2N3+3A+(3Bd1/(YRS ECONOMIC LIFE))\$ 155002. 5. SIMPLE PAYBACK PERIOD (1G/4) 5.73 YEARS 6. TOTAL NET DISCOUNTED SAVINGS (2N5+3C) \$ 2317419. (SIR) = (6 / 1G) =7. SAVINGS TO INVESTMENT RATIO 2.61 (IF < 1 PROJECT DOES NOT QUALIFY) \*\*\*\* Project does not qualify for ECIP funding; 4,5,6 for information only.

8. ADJUSTED INTERNAL RATE OF RETURN (AIRR):

N/A



- · Water-saving 1.5 gallon flush.
- Features Pressure-Clean™ flushometer tank system.
- Three-bolt quick connect system with factory-installed tank gasket and bolts.

K-3458 Wellworth Lite PC Toilet, vitreous china, 1.5 gallon flush. Close-coupled design with elongated bowl. Minimum roughing-in is 12" (305 mm).

Tank/bowl combination includes K-4333 bowl, K-4470 vitreous china tank with Kohler 81100 flushometer tank system, K-4471 tank cover and K-9434 chrome-plated trip lever.

IMPORTANT—For most satisfactory operation, a minimum static water pressure of 25 P.S.I. is required at the toilet supply inlet.

Recommended Seats and Supply K-4650 Lustra™ solid plastic seat with open front and cover.

**K-4652** Lustra solid plastic seat with closed front and cover.

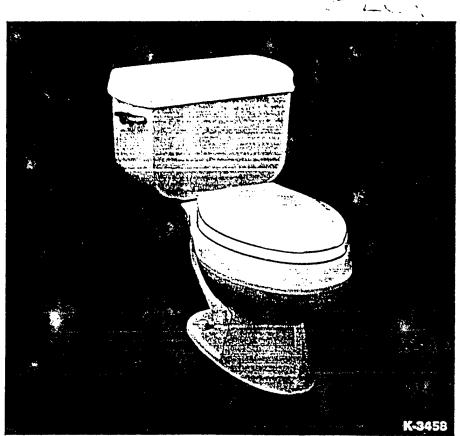
K-4670-C Lustra solid plastic seat (K-4681-C Black Black™) with open front and check hinge.

K-7637 %" angle supply with stop.

Tank Locks—Add suffix "-T" to product number.

Bedpan Lugs—Add suffix "-L" to product number.

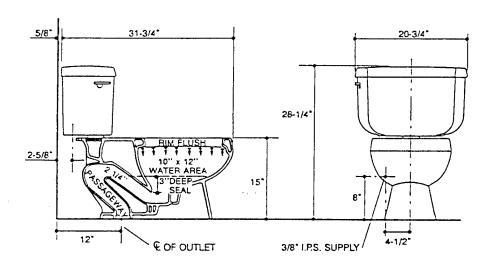
For complete color selection, see Colors section.



Wellworth Lite PC Toilet and Lustra seat (K-4652) in White.

U.S. Pat. Pending







•						
Estimate: Description: Project: Location: Sq. footage:	INSTALL A LIMITED E FORT KNOX	ERATORS & EAP (WTR)	WATER C Bid Date Job #:	94013.03		NG
Line #	Descripti	on				
	Manhours	Matl	Labor	Equipment	Sub	Total
=======================================	= = = = = = = = =		=======			
1511410975	ECO - 3 IN EXISTI	INSTALL	3.5 GAL	FLUSH VALVE	REPAIR KI	r Ea
Unit values Totals	1.24 57.04	15.00 \$690	35.0 \$1,61	4 0.00 2 \$0	0.00	50.04 \$2,302
1511412805	ECO - 2	INSTALL A	AERATOR,	LAVATORY FA	JCET	Po.
Unit values Totals	0.25 82.00	1.00 \$328	7.0 \$2,32	8 0.00 1 \$0	0.00	8.08 \$2,649
1521801100	ECO - 3	INSTALL 1	NEW WATER	SAVING WATH	ER CLOSET,	TANK TYPE,
Unit values Totals	4.02 7678.20	235.00 \$448,850	114.3 \$218,31	0 0.00 8 \$0	0.00	349.30 \$667,168
U15 MECHANICAL	7818	\$449,868	\$222,25	1 \$0	\$0	\$672,119

	========		=======	=========	=======	=========
Line #	Descript	ion				
	Manhours	Matl	Labor	Equipment	Sub	Total
			=======			=======
ESTIMATE TOTAL	7818	\$449,868	\$222,251	\$0	\$0	\$672,119
SALES TAX MATL MARKUP LABOR MARKUP	0.00% 0.00% 0.00%	\$0 \$0	\$0			
EQUIPT MARKUP SUB MARKUP	0.00% 0.00%		4 -	\$0	\$0	
TOTAL BEFORE CONTINGENCY BOND	ONTINGENC 10.00% 0.00%	\$449,868	\$222,251	\$0	\$0	\$672,119 \$67,212 \$0
PROFIT	10.00%					\$67,212
JOB TOTAL						\$806,543

Estimate: ECO - 2 & 3 Date: 15-Dec-94

Description: INSTALL AERATORS & WATER CLOSETS - FAMILY HOUSING

Project: LIMITED EEAP (WTR)Bid Date:

Location: FORT KNOX, KY Job #: 94013.03

Sq. footage: FAM HSG - GP 1 City indx:Louisville, KY

		DOMINANT				
	Manhours	Matl	Labor	Equipment	Sub	Total
		========	======	_ = = = = = = = = = = :	=======	
U15 MECHANICAL	7818	\$449,868	\$222,251	\$0	\$0	\$672,119
TOTAL	7818	\$449,868	\$222,251	\$0	\$0	\$672,119
SALES TAX MATL MARKUP LABOR MARKUP	0.00% 0.00% 0.00%	\$0 \$0	\$0			
EQUIPT MARKUP SUB MARKUP	0.00% 0.00%		·	\$0	\$0	
CONTINGENCY BOND	ONTINGENC 10.00% 0.00%	\$449,868	\$222,251	\$0	\$0	\$672,119 \$67,212 \$0
PROFIT	10.00%					\$67,212
JOB TOTAL						\$806,543

FUNCTION:   TYPICAL OF 21 UNITS     Operating Hours:   24	FACILITY NO.   A19 A   FUNCTION:   PACILITY NO.   A19 A   A19 A		FY94S EEAP FT	T. KN	. KNOX WAT CONSERVATION STUDY	ION S	TUDY		1 α
Existing Fixture System   Coperating Hours:   24   TYPICAL OF 21 UNITS   25   TYPICAL OF 21 UNITS   25   TYPICAL OF 25   TYPIC	FACILITY NO.   FAMILY   PUNCTION:   TYPICAL OF 21 UNITS		CAL	CULAT	ION WORK SHEET 1			DATE:	5 OCT 94
Existing Fixture System   Retrofited Fixture System   Description   LPM   Description   J.PM   Description   J.PM   Description   J.PM   RISPYR Quantity   J. S. NO RETROFIT   J. S. SERVICE SINK   J. S. NO RETROFIT   J. S. SERVICE SINK   J. S.	COUNTRY   Existing Fixure System   Retrofited Fixture System   LPM   Description   LPM   HRS/PR Quantity	FACILITY NO.:	419 A		FUNCTION:	,	UNACCO	A PERS	HOUS DET FAC
Existing Fixture System   Retrofiled Fixture System   LPM   Description   LPM   HRS/YR Quantity	ECO Number         Existing Fixture System         Retrofited Fixture System         Usage Fixtures         Fixtures           ECO Type         Description         1.PM         HRS/YR Quantity           1 Lavatory Sinks         1.DM         1.DM         HRS/YR Quantity           ECO1 TOTAL:         2         1.DM         1.DM           ECO1 TOTAL:         KITCHEN SINK         2.7 INSTALL AERATOR         9.5 60         1           ECO2 TOTAL:         Amic. Sinks         SERVICE SINK         2.7 INSTALL AERATOR         9.5 60         1           ECO2 TOTAL:         Amic. Sinks         1.DM         1.DM<	Occupancy:	FAMILY	1	Operating Hours:	,	1 Y PICAL 24	70 12 TO	<u>ი</u>
Note	ECO Type         Description         LPM         Description         LPM         HRS/YR         Quantity           Lavatory Sinks         SINK W// AERATOR         9.5 NO RETROFIT         LPM         125         2           ECO1 TOTAL:         LPM         LPM         LPM         1         1           ECO2 TOTAL:         SERVICE SINK         22.7 INSTALL AERATOR         9.5 GO         1           ECO2 TOTAL:         LPF         19 1.6 GPF TANK TYPE TOILET         LPF         #FL/YR         1           ECO3 TOTAL:         LPF         LPF         #FL/YR         1           ECO4 TOTAL:         LPF         LPF         #FL/YR         1           ECO4 TOTAL:         LPF         BESIDENTIAL TYPE         9.5 NO RETROFIT         9.5 245         1           Shower Heads         ECO5 TOTAL:         TEMP         TEMP         TEMP         1           F         RESIDENTIAL TYPE         9.5 NO RETROFIT         9.5 245         1           F         Water         CAPACITY: 38,000 BTU/H         322 8760         1           Heater         RECOVERY: 32 GAL/HR         INSTALL INSUL JACKET         322 8760         1           Heater         RECOF TOTAL:         RECOF TOTAL:         RECOF TOTAL:	ECO Number		u	Retrofited Fixture Syster	L L	Usage	Fixtures	Water Leaks
SINK W/ AERATOR   9.5   NO RETROFIT   9.5   125   2	Tavatory Sinks	ECO Type	_		Description			Quantity	ш
KITCHEN SINK   1.5   NO RETROFIT   1.5	ECOT TOTAL:		SINK W/ AERATOR		RETE	9.5		2	1
KITCHEN SINK	ECOT TOTAL:   LPM	Lavatory Sinks							
KITCHEN SINK   9.5   NO RETROFIT   9.5   365   1	SERVICE SINK   9.5   NO RETROFIT   9.5   365   1	ECO1 TOTAL:		Md I		Md I	<b>公司</b>	2	C
SERVICE SINK   22.7   INSTALL AERATOR   9.5   60   1	Misc. Sinks   SERVICE SINK   22.7   INSTALL AERATOR   9.5   60   1	2		9.5	RETROFIT	9.5	365	-	0
TANK TYPE	ECO2 TOTAL:         LPF         LPF         HFL/YR         2           3         TANK TYPE         19         1.6 GPF TANK TYPE TOILET         6.1         14600         1           ECO3 TOTAL:         LPF         LPF         HFL/YR:         1           ECO4 TOTAL:         LPM         LPM         HRS/YR:         0           ECO4 TOTAL:         LPM         LPM         HRS/YR:         0           ECO5 TOTAL:         ECO5 TOTAL:         TEMP         1         1           ECO5 TOTAL:         ECO5 TOTAL:         TEMP         1         1           ECO5 TOTAL:         TEMP         TEMP         1         1           GAS)         Heater         RECOVERY:         32 GALJHR         INSTALL INSUL JACKET         322         8760         1           GAS)         GAS         INSTALL INSUL JACKET         322         8760         1           ECO5 TOTAL:         RECOVERY:         32 GALJHR         INSTALL INSUL JACKET         1<	Misc. Sinks	SERVICE SINK	22.7	TALL	9.5	09	-	
TANK TYPE   19	TANK TYPE   19 1.6 GPF TANK TYPE TOILET 6.1   14600   1	FCO2 TOTAL		100	1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、	101		2	C
STANK   17FE   19   1.0 GPF   TANK   17FE   10ILE   6.1   1450U   1   1450U	Water Closets		TANIV TVDF	į	THE TOTAL VIEW TO 0 1			1	
CAPACITY: 38,000 BTU/H   325 REDUCE STORAGE TEMP   322   8760   1   1   1   1   1   1   1   1   1	ECO3 TOTAL:         LPF         HFLYR         1           4         Urinals         LPM         HRS/YR         0           ECO4 TOTAL:         Shower Heads         LPM         HRS/YR         0           ECO5 TOTAL:         LPM         HRS/YR         0           ECO5 TOTAL:         TEMP         TEMP         1           ECO5 TOTAL:         TEMP         TEMP         1           Heater         CAPACITY: 38,000 BTU/H         325 REDUCE STORAGE TEMP         322 8760         1           Heater         RECOVERY: 32 GAL/HR         INSTALL INSUL JACKET         322 8760         1           ECO6 TOTAL:         CAS)         Systems Engineering and Management Corporation, Knoxville, TN	Water Closets	IANK I TPE	22	1.6 GPF IANK I TPE I UILET	0.1	14600	-	
LFF	COORTION   COORTION   Cooperation   Cooper	TOT COL		1		L	0.0		
RESIDENTIAL TYPE   9.5   NO RETROFIT   9.5   245   1	Urinals         LPM         LPM         HRS/YR         0           ECO4 TOTAL:         5         RESIDENTIAL TYPE         9.5         NO RETROFIT         9.5         245         1           Shower Heads         Shower Heads         TEMP         9.5         245         1         1           ECO5 TOTAL:         CAPACITY: 38,000 BTU/H         325         REDUCE STORAGE TEMP         322         8760         1           Water         CAPACITY: 38,000 BTU/H         325         REDUCE STORAGE TEMP         322         8760         1           (GAS)         ECO6 TOTAL:         INSTALL INSUL JACKET         322         8760         1           ECO6 TOTAL:         Systems Engineering and Management Corporation, Knoxville, TN	4					***	-	0
RESIDENTIAL TYPE   9.5   NO RETROFIT   9.5   245   1	ECO4 TOTAL:         LPM         HRS/YR         0           Shower Heads         RESIDENTIAL TYPE         9.5         NO RETROFIT         9.5         245         1           ECO5 TOTAL:         TEMP         TEMP         Systems Engineering and Management Corporation, Knoxville, TN	Urinals							
RESIDENTIAL TYPE   9.5   NO RETROFIT   9.5   245   1	Shower Heads	TOTATOTAL .		2			ייואייייייייייייייייייייייייייייייייייי		C
RESIDENTIAL LYPE 9.5 NO RETROFIT 9.5 245 1	Shower Heads         B.5 NO RETROFIT         9.5 245         1           Shower Heads         TEMP         TEMP         1           ECOS TOTAL:         TEMP         TEMP         1           6         40 GAL REPUBLIC #406         TEMP         1           Water         CAPACITY: 38,000 BTU/H         325 REDUCE STORAGE TEMP         322 8760         1           Heater         RECOVERY: 32 GAL/HR         INSTALL INSUL JACKET         322 8760         1           GAS)         ECOG TOTAL:         Systems Engineering and Management Corporation, Knoxville, TN	ECO4 101AL		Z L	The state of the s	Z Z	TKS/TK		0
::       TEMP       TEMP       1         40 GAL REPUBLIC #406       325 REDUCE STORAGE TEMP       322 8760       1         CAPACITY: 38,000 BTU/H       325 REDUCE STORAGE TEMP       322 8760       1         RECOVERY: 32 GAL/HR       INSTALL INSUL JACKET       322 8760       1         .:	ECO5 TOTAL:         TEMP         TEMP         1         1           6         40 GAL REPUBLIC #406         1         25         REDUCE STORAGE TEMP         322         8760         1           Heater         RECOVERY: 32 GAL/HR         INSTALL INSUL JACKET         322         8760         1           (GAS)         ECO6 TOTAL:         ECO6 TOTAL:         1         1           SYSTEMS CORP         Systems Engineering and Management Corporation, Knoxville, TN	5 Shower Heads		9.2	NO RETROFIT	9.5	245	<b>.</b>	0
40 GAL REPUBLIC #406  CAPACITY: 38,000 BTU/H  RECOVERY: 32 GAL/HR  INSTALL INSUL JACKET 322 8760 1  RECOVERY: 32 GAL/HR  INSTALL INSUL JACKET 322 8760 1	6         40 GAL REPUBLIC #406         REPUBLIC #406         1         2         3         2         875         1         1         1         1         1         2         2         3         2         875         1         2         3         2         875         3         3         3         8         8         3         3         8         8         8         8         9	ECO5 TOTAL:		TEMP		TEMP		1	0
CAPACITY: 38,000 BTU/H 325 REDUCE STORAGE TEMP 322 8760 1 RECOVERY: 32 GAL/HR INSTALL INSUL JACKET 322 8760 1 :	Water         CAPACITY: 38,000 BTU/H         325 REDUCE STORAGE TEMP         322 8760         1           Heater         RECOVERY: 32 GAL/HR         INSTALL INSUL JACKET         322 8760         1           (GAS)         ECO6 TOTAL:         Systems Engineering and Management Corporation, Knoxville, TN	9	40 GAL REPUBLIC #406						
RECOVERY: 32 GAL/HR       INSTALL INSUL JACKET       322       8760       1         :       .       .       .       .       .       .	Heater RECOVERY: 32 GAL/HR INSTALL INSUL JACKET 322 8760 1	Water	CAPACITY: 38,000 BTU/H	325	REDUCE STORAGE TEMP	322	8760	-	
	ECO6 TOTAL:  Systems Engineering and Management Corporation, Knoxville, TN	Heater (GAS)	RECOVERY: 32 GAL/HR		INSTALL INSUL JACKET	322	8760	-	
	ECO6 TOTAL:   1   Systems Engineering and Management Corporation, Knoxville, TN								
	SYSTEMS CORP Systems Engineering and Management Corporation,	ECO6 TOTAL:		1		19. 19. 19. 19. 19. 19. 19. 19. 19. 19.		1	0
			CORP	Sveter	ns Engineering and Manager	nent C	rnoration		NT alli
SYSTEMS CORP				Oyare	ns Engineering and manager		טו אטו אוויטן וט		
Systems Engineering and Management Corporation,									

Systems Engineering and Management Corporation, Knoxville, TN

FACILITY NO.:         Water Rate:         0.42         \$/KL         Energy Rate:         \$/KWH           419 A         Gas Rate:         10.51         \$/KL         Energy Rate:         \$/KWH           ECO Number         Annual Water         Annual Energy Saving         WATER         Total         Total           ECO Type         Saving LPY         KWH         KWH         MWH         Dollar Saving         \$0.00           Lavatory Sinks         0         0         0         0         \$0.00         \$0.00           ECOT TOTAL:         0         0         0         \$0.00         \$0.00         \$0.00           ECOZ TOTAL:         0         0         \$0.00         \$0.00         \$0.00         \$0.00           ECOZ TOTAL:         0         0         \$0.00         \$0.00         \$0.00         \$0.00           ECOZ TOTAL:         47.520         0         \$0.00         \$0.00         \$0.00         \$0.00           ECOZ TOTAL:         47.520         0         \$0.00         \$0.00         \$0.00         \$0.00           ECOZ TOTAL:         47.520         0         \$0.00         \$0.00         \$0.00         \$0.00           ECOZ TOTAL:         48.340	Water Rate:   0.42   \$/KL   Energy Rate:   \$/KV   Energy Rate:	CA   CA   CA   CA   CA   CA   CA   CA	\$/KL \$/MWH Energy Saving	RK SHEET 2 Energy Rate:		
Water Rate: 0.42 \$/K  Energy Rate: \$KVN	Rate:         0.42         \$/KL           Rate:         10.51         \$/MWH           ual Water         Annual Energy         \$/MWH           ual Water         Annual Energy         \$/MWH           ual Water         ELEC         ELEC           ual Water         ELEC         ELEC           ual Water         ELEC         ELEC           ual Water         0         0           ual Color         0	Water Rate: 0.42   Gas Rate: 10.51   Er   Annual Water   Er   Er	\$/KL MWH nergy Si	Energy Rate:		
Gas Rate:         10.51         \$\text{MVM}{\text{MVH}}\$         Demand Rate:         \$\text{ATLEC}{\text{GAS}}\$         \$\text{ATLEC}{\text{GAS}}\$         \$\text{ATLEC}{\text{GAS}}\$         \$\text{ATLEC}{\text{GAS}}\$         \$\text{ATLEC}{\text{GAS}}\$         \$\text{ATLEC}{\text{GAS}}\$         \$\text{ATLEC}{\text{GAS}}\$         \$\text{ATLEC}{\text{GAS}}\$         \$\text{ATLEC}{\text{GAS}}\$         \$\text{GOOD}{\text{GOOD}}\$         \$\text{GOOD}{\text{GOOD}}\$         \$\text{GOOD}{\text{GOOD}}\$         \$\text{GOOD}{\text{GOOD}}\$         \$\text{GOOD}\$	Rate:       10.51       \$/MWH         ual Water       Annual Energy         ual Water       Annual Energy         ng LPY       KW       KWH         0       0       0         0       0       0         0       0       0         0       0       0         0       0       0         0       0       0         0       0       0         0       0       0         0       0       0         0       0       0         0       0       0         0       0       0         0       0       0         0       0       0         10       0       0         0       0       0         0       0       0         0       0       0         17 WYR       0       0         3,946       0       0         0       0       0         0       0       0         0       0       0         0       0       0         2,946 <t< td=""><td>Gas Rate:         10.51           er         Annual Water         Annual Mater           Saving         LPY         KW           0         0           1ks         0           0         0</td><td>MWH nergy S</td><td>ı I</td><td></td><td>\$/KWH</td></t<>	Gas Rate:         10.51           er         Annual Water         Annual Mater           Saving         LPY         KW           0         0           1ks         0           0         0	MWH nergy S	ı I		\$/KWH
er         Annual Water         Annual Energy Saving         WATER         Total           ks         Caving LPY         KWH         MWH         Dollar Saving         Pollar Saving           ks         0         0         0         \$0.00         \$0.00           c         0         0         0         \$0.00         \$0.00           c         0         0         0         \$0.00         \$0.00           c         0         0         \$0.00         \$0.00         \$0.00           c         0         0         \$0.00         \$0.00         \$0.00         \$0.00           d         47,520         0         0         \$0.00 </td <td>naj Water         Annual Energy           ng LPY         KW         KWH           0         W         C           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           10         0         0           0         0         0           0         0         0           ANNUAL         NT WR           3,946         0         0           3,946         0         0</td> <td>er Annual Water Annual  Saving LPY KW  0 0 0 0 0 0 0</td> <td>nergy Sa</td> <td>Demand Rate:</td> <td></td> <td>\$/KW</td>	naj Water         Annual Energy           ng LPY         KW         KWH           0         W         C           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           10         0         0           0         0         0           0         0         0           ANNUAL         NT WR           3,946         0         0           3,946         0         0	er Annual Water Annual  Saving LPY KW  0 0 0 0 0 0 0	nergy Sa	Demand Rate:		\$/KW
ks         ELEC         ELEC         GAS         Dollar Saving         Dollar Saving           lks         0         0         50.00         \$0.00           s         0         0         \$0.00         \$0.00           s         47,520         0         0         \$0.00           47,520         0         0         \$0.00         \$0.00           47,520         0         0         \$0.00         \$0.00           47,520         0         0         \$0.00         \$0.00           47,520         0         0         \$0.00         \$0.00           47,520         0         0         \$0.00         \$0.00           48,340         0         0         \$0.00         \$0.00           0         0         \$0.00         \$0.00         \$0.00           0         0         \$0.00         \$0.00         \$0.00           0         0         \$0.00         \$0.00           0 <td>ng         LPY         KW         KWH           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           ANNUAL         0         0           OT WAR         0         0           SUMPTION         17 ERS)         17 ERS)           3,946         0         0           3,946         0         0</td> <td>Saving LPY KW  0 0 0 0 0 0 0 0</td> <td></td> <td>WATER</td> <td>Total</td> <td>Total</td>	ng         LPY         KW         KWH           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           ANNUAL         0         0           OT WAR         0         0           SUMPTION         17 ERS)         17 ERS)           3,946         0         0           3,946         0         0	Saving LPY KW  0 0 0 0 0 0 0 0		WATER	Total	Total
No. 10   N	0 0 0 0 0 0 0 0 7,520 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0		Dollar Saving	Dollar Saving	Dollare Invested
Ke	0 0 0 0 0 7,520 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1ks 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	╀	\$0.00	\$0.00	\$0.00
0         0         \$0.00         \$0.00           0         0         \$0.00         \$0.00           s         \$0.00         \$0.00         \$0.00           s         \$0.00         \$0.00         \$0.00           47,520         0         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00         \$0.00           do         0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WIR         0         \$0.00         \$0.00 <t< td=""><td>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>000</td><td>0</td><td>\$0.00</td><td>\$0.00</td><td>\$0.00</td></t<>	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000	0	\$0.00	\$0.00	\$0.00
0         0         \$0.00         \$0.00           s         \$0.00         \$0.00         \$0.00           s         \$0.00         \$0.00         \$0.00           47,520         0         \$0.00         \$0.00           47,520         0         \$0.00         \$0.00           47,520         0         \$0.00         \$0.00           47,520         0         \$0.00         \$0.00           48,340         0         \$0.00         \$0.00           47,520         0         \$0.00         \$0.00           48,340         \$0.00         \$0.00         \$0.00           \$0         \$0.00         \$0.00         \$0.00           \$0         \$0.00         \$0.00         \$0.00           \$0         \$0.00         \$0.00         \$0.00           \$0         \$0.00         \$0.00         \$0.00           \$0         \$0.00         \$0.00         \$0.00           \$0         \$0.00         \$0.00         \$0.00           \$0         \$0.00         \$0.00         \$0.00           \$0         \$0.00         \$0.00         \$0.00           \$0         \$0.00         \$0.00         \$0.00     <	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	0	\$0.00	\$0.00	\$0.00
s         0         \$0.00         \$0.00           s         47,520         0         \$0.20         \$1.34           d         0         \$0.20         \$1.34           ets         0         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00         \$0.00           ts         0         \$0.00         \$0.00         \$0.00           ts         0         \$0.00         \$0.00         \$0.00           d         0         \$0.00         \$0.00         \$0.00           eST ANNUAL         0.023         \$0.00         \$0.00           HOT WIR         0.023         \$0.00         \$0.00           43,946         0         \$0.00         \$0.00           43,946         0         \$0.00         \$0.00           43,946         0         \$0.00         \$0.00           \$0	0 0 0 38,340 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			\$0.00	\$0.00	\$0.00
\$ 47,520         \$ 60.20         \$ 1.34           \$ 0         \$ 0.00         \$ 0.00         \$ 0.00           \$ 188,340         \$ 0         \$ 0         \$ 1.34           \$ 188,340         \$ 0         \$ 0         \$ 1.34           \$ 0         \$ 0         \$ 1.34         \$ 1.34           \$ 188,340         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0.00         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00	7,520 0 0 38,340 0 0 0 0 0 0 0 0 0 0 0 0 0		0	\$0.00	\$0.00	\$0.00
47,520         0         \$0.00         \$0.00           its         0         0         \$0.00         \$0.00           its         0         \$0.00         \$1.34         \$1.34           its         0         \$0.00         \$0.00         \$0.00           its         0         \$0.00         \$0.00         \$0.00           its         0         \$0.00         \$0.00         \$0.00           its         0         0         \$0.00         \$0.00           its         0 <th< td=""><td>0 38,340 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td></td><td>0</td><td>\$0.20</td><td>\$1.34</td><td>\$9.70</td></th<>	0 38,340 0 0 0 0 0 0 0 0 0 0 0 0 0		0	\$0.20	\$1.34	\$9.70
47,520         0         0         \$0.20         \$1.34           188,340         \$0.00         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00         \$0.00           HOT WIR         0.23         \$0.00         \$0.00           (LITERS)         \$0.07         \$0.07         \$0.71           43,946         0         0         \$0.00         \$0.71	7,520 0 0 88,340 0 0 0 0 0 0 0 0 0 0 0 0 0		0	\$0.00	\$0.00	\$0.00
188,340         \$ \$78.16         \$78.16           \$ 0         \$ 0.00         \$ 0.00         \$ 0.00           \$ 0         \$ 0.00         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0.00         \$ 0.00         \$ 0.00           \$ 0         \$ 0.00         \$ 0.00         \$ 0.00           \$ 0         \$ 0.00         \$ 0.00         \$ 0.00           \$ 0         \$ 0.00         \$ 0.00         \$ 0.00           \$ 0         \$ 0.00         \$ 0.00         \$ 0.00           \$ 0         \$ 0.00         \$ 0.00         \$ 0.00           \$ 0         \$ 0.00         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0.00         \$ 0.00           \$ 0         \$ 0         \$ 0 <td>38,340 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>47,520</td> <td></td> <td>\$0.20</td> <td>\$1.34</td> <td>\$9.70</td>	38,340 0 0 0 0 0 0 0 0 0 0 0 0 0	47,520		\$0.20	\$1.34	\$9.70
tfs         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WIR         0.23         \$0.00         \$0.00           CONSUMPTION         0.07         \$0.07         \$0.71           43,946         0         \$0.07         \$0.00           43,946         0         \$0.00         \$0.07	0 0 0 0 0 0 0 0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0			\$78.16	\$78.16	\$418.80
0         \$0.00         \$0.00           188,340         \$78.16         \$78.16           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           est Annual         0         \$0.00           CONSUMPTION         0.07         \$0.00           43,946         0         0           43,946         0         0           6         0         \$0.00           6         \$0.00         \$0.71	0 0 0 0 0 0 0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0			\$0.00	\$0.00	\$0.00
188,340         \$78.16         \$78.16           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           color         \$0.00         \$0.00           color         \$0         \$0.00           est Annual         \$0         \$0.00           HOT WTR         \$0.23         \$2.42           CONSUMPTION         \$0.07         \$0.71           43,946         \$0         \$0         \$0.71           43,946         \$0         \$0         \$3.13	38,340 0 0 0 0 0 0 0 0 0 0 0 0 XIMPTION ITERS) 3,946 0 0 0 3,946			\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.23         \$0.00         \$0.07           CONSUMPTION         0.07         \$0.71         \$0.71           43,946         0         0         \$0.00         \$0.00           43,946         0         0         \$0.00         \$0.00	0 0 0 0 0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0			\$78.16	\$78.16	\$418.80
0         \$0.00         \$0.00           0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WIR         0.23         \$0.00         \$0.71           CONSUMPTION         0.07         \$0.71         \$0.71           43,946         0         0         \$0.00         \$3.13	0 0 0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0			\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00         \$0.00           est Annual         0         0         \$0.00         \$0.00           HOT WTR         0.23         \$0.00         \$0.71           CONSUMPTION         0.07         \$0.07         \$0.71           43,946         0         0         \$0.00         \$3.13	0 0 0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 3,946			\$0.00	\$0.00	\$0.00
ds         0         \$0.00         \$0.71         \$0.72         \$0.72<	0 0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 3,946			\$0.00	\$0.00	\$0.00
ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           est Annual         0         \$0.00         \$0.00           HOT WTR         0.23         \$0.7         \$0.71           CONSUMPTION         0.07         \$0.7         \$0.71           43,946         0         0         \$0.00         \$0.00	0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0			\$0.00	\$0.00	\$0.00
ds         0         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.07         \$0.71<	0 0 0 0 0 ANNUAL T WTR SUMPTION ITERS) 3,946 0 0		0	\$0.00	\$0.00	\$0.00
0         0         \$0.00         \$0.00           0         0         \$0.00         \$0.00           EST ANNUAL         0.23         \$2.42           HOT WTR         0.07         \$0.71           CONSUMPTION         0.07         \$0.71           43,946         0         \$0.00           43,946         0         \$0.00	0 0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0		0	\$0.00	\$0.00	\$0.00
0         0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0.23         \$2.42           HOT WTR         0.07         \$0.71           CONSUMPTION         0.07         \$0.71           (LITERS)         43,946         0           43,946         0         \$0.00	0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0		0	\$0.00	\$0.00	\$0.00
EST ANNUAL       CONSUMPTION       CONSUMPTION       \$2.42         CONSUMPTION       0.07       \$0.71         (LITERS)       43,946       0       \$0.00         43,946       0       \$0.00       \$3.13	ANNUAL  T WTR  SUMPTION  TERS)  3,946  3,946  0  0	0		\$0.00	\$0.00	\$0.00
CONSUMPTION 0.07 \$2.42   \$2.42   CONSUMPTION 0.07   \$0.71   \$0.71   \$43,946   0 0   \$6.00 \$3.13	3,946 0 0		C C			
CONSUMPTION       0.07       \$0.71         (LITERS)       43,946       0       0       \$0.00       \$3.13	3,946 0 0		0.23		\$2.42	\$16.80
(LITERS) 43,946 0 0 \$0.00 \$3.13	3,946 3,946 0 0		0.07		\$0.71	\$60.00
43,946 0 0 0 \$0.00 \$3.13	3,946 0 0					
43,946 0 0 0 \$0.00 \$3.13	3,946 0 0	43,940				
		43,946		\$0.00	\$3.13	\$76.80

Systems Engineering and Management Corporation, Knoxville, TN

		r KNI	TANOY MAT	ONC	YOUT		10
	1 1 343 ELAF F F		ION WORK SHEET 4	2		DATE.	F OCT 04
	OALO	Z CLA	ULATION WORN SHEET I			מובי.	2000
FACILITY NO. :	450 A&B		FUNCTION:		UNACCO	M PERS	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:	·	24	5	)
ECO Number	Existing Fixture System		Retrofited Fixture System	ш	Usage	Fixtures	Water Leaks
ECO Type	Description		Description	LPM	<b>HRS/YR</b>	Quantity	Eliminated LPY
1	SINK W/ AERATOR	9.5	NO RETROFIT	9.5	125	2	
Lavatory Sinks							
ECO1 TOTAL:		LPM		LPM	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2	0
2	KITCHEN SINK	9.5	NO RETROFIT	9.5	365	1	0
Misc. Sinks	SERVICE SINK	22.7	INSTALL AERATOR	9.5	09	1	
				Į.			
ECO2 TOTAL:		LPF		LPF	#FL/YR	2	0
3	TANK TYPE	19	1.6 GPF TANK TYPE TOILET	6.1	14600	1	
Water Closets							
ECO3 TOTAL:		LPF		LPF	#FL/YR	-	0
4							
Urinals							
- TATOL A COL				2			
ECO4 IOIAL:		LFR		7	HKS/1R		0
Shower Heads	RESIDENTIAL TYPE	9.5	NO RETROFIT	9.5	245	-	0
ECO5 TOTAL:		TEMP		TEMP		1	0
9	40 GAL REPUBLIC #406						
Water	CAPACITY: 38,000 BTU/H	325	REDUCE STORAGE TEMP	322	8760	-	
Heater	RECOVERY: 32 GAL/HR		INSTALL INSUL JACKET	322	8760	-	
(GAS)							
ECOE TOTAL .						-	C
ECOS IOIAL.					a trade to the a	-	

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT. KNOX	T. KNO		WATER CONS	RVATION STUDY	TUDY	2 OF 2
		Z)	LCULAT	ION WO	V		
FACILITY NO. :	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
450 A&B	Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
ECO Number	Annual Water	Annual	Energy	Saving	WATER	Total	Total
ECO Type	Saving LPY	ELEC KW	ELEC KWH	GAS MWH	Dollar Saving	Dollar Saving	Dollars Invested
1	0			0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Misc. Sinks	47,520			_	\$0.20	\$8.83	\$9.70
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	47,520	0	0	-	\$0.20	\$8.83	\$9.70
3	188,340				\$78.16	\$78.16	\$418.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$418.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
5	0			0	\$0.00	\$0.00	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
9	EST ANNUAL						
Water	HOT WTR			0.23		\$2.42	\$16.80
Heater	CONSUMPTION			7.70		\$80.96	\$60.00
(GAS)	(LITERS)						
	43,946						
ECO6 TOTAL:	43,946	0	0	8	\$0.00	\$83.38	\$76.80
CVCTEMS CODE	990			,		Monogont Con	M Vacanie Vacanie
OIOIEINIO C	7 7			Systems	s Engineering สก	d Management vor	Systems Engineering and Management Corporation, Anoxville, IN

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT.		KNOX WAT CONSERVATION STUDY	S NOI	TUDY		10
	CALCI	CULAT	ULATION WORK SHEET 1			DATE:	5 OCT 94
FACILITY NO. :	1426 A&B		FUNCTION:	— <sub>I</sub> ,	UNACCOL	A PERS	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:	1	24 24	0	0
ECO Number	Existing Fixture System		Retrofited Fixture System	n	Usage	Fixtures	Water Leaks
ECO Type	Description	LPM	Description	LPM	<b>HRS/YR</b>	Quantity	Eliminated LPY
1 Lavatory Sinks	SINK W/ AERATOR	9.5	NO RETROFIT	9.5	125	-	
ECO1 TOTAL:		LPM		LPM		1	0
2	KITCHEN SINK	9.5	NO RETROFIT	9.5	365	1	0
Misc. Sinks	SERVICE SINK	22.7	INSTALL AERATOR	9.5	09	-	
ECO2 TOTAL:		LPF		LPF	#FL/YR	2	0
3	TANK TYPE	19	1.6 GPF TANK TYPE TOILET	6.1	7300	2	
Water Closets	FLUSH TYPE	17	3.5 GPF REPAIR KIT	13.2	14600	-	
ECO3 TOTAL:		LPF		LPF	#FL/YR	က	0
4							
Urinals							
ECO4 TOTAL:		LPM		LPM	HRS/YR	0	0
5	RESIDENTIAL TYPE	9.5	NO RETROFIT	9.5	245	-	0
Shower Heads							
ECOS TOTAL .		TEMD		TEMP	1.5	-	0
1000						-	
Motor	40 GAL KOOD	337	BEDITCE STORAGE TEMP	322	8760	-	
Water	.  >	100		322	8760		
(GAS)			וואס ו ארב וואססר אסטער ו	776	0000	-	
ECO6 TOTAL:				.3,0 3,3, 3,4,		-	0

Systems Engineering and Management Corporation, Knoxville, TN

						_	_	_	_	_		_				_	_	_		_		_				
2 OF 2		\$/KWH	\$/KW	Total	Dollars Invested	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$9.70	\$0.00	\$9.70	\$838.80	\$60.00	\$0.00	\$898.80	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
TUDY				Total	Dollar Saving	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$8.83	\$0.00	\$8.83	\$78.16	\$23.02	\$0.00	\$101.19	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
RVATION STUDY	CALCULATION WORK SHEET 2	Energy Rate:	Demand Rate:	WATER	Dollar Saving	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.20	\$0.00	\$0.20	\$78.16	\$23.02	\$0.00	\$101.19	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
R CON	OW NO			Saving	GAS	0	0	0	0	0	-	0	-									0	0	0	0	
X WATER CON	LCULAT	\$/KL	\$/MWH	<b>Energy Saving</b>	ELEC				0				0												0	
T. KNO	CA	0.42	10.51	Annual	ELEC KW				0				0												0	
FY94S EEAP FT. KNO		Water Rate:	Gas Rate:	Annual Water	Saving LPY	0	0	0	0	0	47,520	0	47,520	188,340	55,480	0	243,820	0	0	0	0	0	0	0	0	EST ANNUAL
			1420 A&B	ECO Number	ECO Type	-	Lavatory Sinks		ECO1 TOTAL:	2	Misc. Sinks		ECO2 TOTAL:	3	Water Closets		ECO3 TOTAL:	4	Urinals		ECO4 TOTAL:	5	Shower Heads		ECO5 TOTAL:	9

Systems Engineering and Management Corporation, Knoxville, TN

\$16.80

\$9.37

0.89

CONSUMPTION

(LITERS)

43,946 **43,946** 

ECO6 TOTAL:

**HOT WTR** 

Water Heater (GAS) \$76.80

\$90.33

\$0.00

6

0

0

	1 4 11 01 011						0 4
	FY94S EEAP FI		KNOX WAIL CONSERVATION STUDY	2 2 2	1 UDY		3
	CALCI	:ULA	ULATION WORK SHEET 1			DATE:	5 OCT 94
FACILITY NO.:	1432 A		FUNCTION:		UNACCON	M PERS	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:		1 FICAL 24	0 80 -0	0
ECO Number	Existing Fixture System		Retrofited Fixture System	E	Usage	Fixtures	Water Leaks
ECO 1ype	SINK W/ AFRATOR	7 9.5	Description NO RETROFIT	7 7 5 5	125	Quantity 2	Eliminated LPT
Lavatory Sinks							
ECO1 TOTAL:		LPM		LPM	A STATE OF THE STA	2	0
2	KITCHEN SINK	9.2	NO RETROFIT	9.5	365	-	0
Misc. Sinks					:		
FCO2 TOTAL:		10 10		10	#FI MR	-	C
1000		-					
3 Water Closets	IANK IYPE	19	1.6 GPF IANK IYPE IOILEI	6.1	14600	-	
ECO3 TOTAL:		LPF		LPF	#FL/YR	-	0
4							
Urinals							
TOT YOUL					- P.		
ECO4 IOIAL:		7		L Z	디	>	Û
5 Shower Heads	RESIDENTIAL TYPE	9.5	NO RETROFIT	9.5	245	-	55640
- 4 - 0 - 0						,	1
ECO5 IOIAL:		IEMP		IEMP		-	55640
	$\neg$						
Water	Ç	331	REDUCE STORAGE TEMP	322	8760	<b>-</b>	
Heater	RECOVERY: ?		INSTALL INSUL JACKET	322	8760	-	
(GAS)							
ECO6 TOTAL:				\$ 673.7		1	0

Systems Engineering and Management Corporation, Knoxville, TN

# SASTEMS CORP PAGE 3-22

	FY94S EEAP F	T. KNO	X WATE	ER CON	FY94S EEAP FT. KNOX WATER CONTRIVATION STUDY	TUDY	2 OF 2
		CAL	LCULAT	OM NOI	CULATION WORK SHEET 2		
FACILITY NO.:	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
ECO Number	Annual Water	Annual	Energy	Saving	WATER	Total	Total
ECO Type	Saving LPY	ELEC KW	ELEC KWH	GAS	Dollar Saving	Dollar Saving	Dollars Invested
1				0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
က	188,340				\$78.16	\$78.16	\$418.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$418.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
2	55,640			96	\$23.09	\$1,034.18	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	55,640	0	0	96	\$23.09	\$1,034.18	\$0.00
9	EST ANNUAL						
Water	HOT WTR			0.68		\$7.11	
Heater	CONSUMPTION			7.70		\$80.96	\$60.00
(GAS)	(LITERS)						
	43,946						
ECO6 TOTAL:	43,946	0	0	8	\$0.00	\$88.07	\$60.00

SYSTEMS CORP

PAGE 3 -23

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT		. KNOX WATER CONSERVATION STUDY	FION S	TUDY		10,
	CALCI	ULATI	ULATION WORK SHEET 1			DATE:	5 OCT 94
FACILITY NO.:	4041		FUNCTION:	,	UNACCO	M PERS I	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:	·	1 Y PICAL 24	1 YPICAL OF 10 UNITS	S =
ECO Number	Existing Fixture System		Retrofited Fixture System	E	Usage	Fixtures	Water Leaks
ECO Type			Description	LPM	<b>HRS/YR</b>	Quantity	Eliminated LPY
1	SINK W/ AERATOR	9.5 N	NO RETROFIT	9.5	125	1	
Lavatory Sinks							
ECO4 TOTAL .		I DW		DM		•	c
E001 101AE.		-1-	TILL OUT THE		200	- (	
Z Misc. Sinks	KII CHEN SINK	C.D	NO KETROFII	9.5	365	7	0
ECO2 TOTAL:		LPF		LPF	#FL/YR	2	0
2	TANIV TVDE	t	C ODE TANK TYDE TON ET	7	4 4000	*	
Water Closets	IANK I TPE	2	1.0 GPF IANK IYPE IOILE I	0.0	14600	-	
ECOS TOTAL .		ם ב		- 20 -	#EI ND	7	
4		5			4		
Urinals							
TOT TOTAL							•
ECO4 IOIAL:	- 1	7		L L	חאט/זא	0	D
5 Shower Heads	RESIDENTIAL TYPE	5.68	NO RETROFIT	5.68	245	-	0
ECO5 TOTAL:		TEMP		TEMP		<b>-</b>	0
9	40 GAI 2 GLO 850						
Water	E	334 F	REDUCE STORAGE TEMP	322	8760	-	
Heater	RY	11	INSTALL INSUL JACKET	322	8760		
(GAS)							
ECOR TOTAL .					の (本語) (本語) (本語) (本語) (本語) (本語) (本語) (本語)	·	
<u> </u>		23		9		-	0
CVSTEMS CORD		C. C. C.		1 1 1		7	110 TA
		oysterii	Systems Engineering and Management Corporation,	inent C	orporation	אסחא ,ו	Anoxviile, i'N
-24							

Systems Engineering and Management Corporation, Knoxville, TN

					ested												(														
2 OF 2		\$/KWH	\$/KW	Total	Dollars Invested	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$418.80	\$0.00	\$0.00	\$418.80	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00			\$60.00			\$60.00
TUDY				Total	Dollar Saving	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$78.16	\$0.00	\$0.00	\$78.16	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$9.37	\$80.96			\$90.33
FY94S EEAP FT. KNOX WATER CONSTRUATION STUDY	CALCULATION WORK SHEET 2	Energy Rate:	Demand Rate:	WATER	Dollar Saving	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$78.16	\$0.00	\$0.00	\$78.16	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00						\$0.00
ER CON	FION WO			Saving	GAS MWH	0	0	0	0	0	0	0	0									0	0	0	0		0.89	7.70			6
X WAT	ILCULA"	\$/KL	\$/MWH	Annual Energy	ELEC KWH				0				0												0						0
T. KNO	/)	0.42	10.51	Annual	ELEC KW				0				0												0						0
FY94S EEAP F		Water Rate:	Gas Rate:	Annual Water	Saving LPY	l	0	0	0	0	0	0	0	188,340	0	0	188,340	0	0	0	0	0	0	0	0	EST ANNUAL	HOT WTR	CONSUMPTION	(LITERS)	43,946	43,946
		FACILITY NO.: 4041	:	ECO Number	ECO Type	_	Lavatory Sinks		ECO1 TOTAL:	2	Misc. Sinks		ECO2 TOTAL:	3	Water Closets		ECO3 TOTAL:	4	Urinals		ECO4 TOTAL:	2	Shower Heads		ECO5 TOTAL:	9	Water	Heater	(GAS)		ECO6 TOTAL:

Systems Engineering and Management Corporation, Knoxville, TN

# PAGE 3 -25

A	FUNCTION:  Operating Hours:  Retrofited Fixture System Description NO RETROFIT INSTALL AERATOR INSTALL AERATOR 1.6 GPF TANK TYPE TOILET	UNACCOI TYPICAL 24 LPM HRS/YR 9.5 125 9.5 60 LPF #FL/YR 6.1 14600	DATE: 5 C UNACCOM PERS HOUS TYPICAL OF 16 UNITS 24 Usage Fixtures Wate HRS/YR Quantity Elimin 125 1 60 1 365 1 60 1 24 #FL/YR 2 2 14600 1	FOCT 94 HOUS DET FAC NITS Water Leaks Eliminated LPY 0 0 212.9
Existing Fixture System Description SINK W/ AERATOR SERVICE SINK SERVICE SINK RESIDENTIAL TYPE S RESIDENTIAL TYPE S 40 GAL NATIONAL	PUNCTION: Operating Hours: Retrofited Fixture System Description NO RETROFIT INSTALL AERATOR INSTALL AERATOR 1.6 GPF TANK TYPE TOILET	'	SCOM PERS SAL OF 16 U  ge Fixtures  YR Quantity  1 1 7 7 7 7 8 1 1 1 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	S DET ater Lea ninated 0 0 212.9
FAMILY  Risting Fixture System  Description SINK W/ AERATOR  KITCHEN SINK SERVICE SINK  TANK TYPE  RESIDENTIAL TYPE  RESIDENTIAL TYPE  15  RESIDENTIAL TYPE  16  17  18  19  10  10  11  11  12  13  14  15  15  15  16  17  18  18  18  18  18  18  18  18  18	Operating Hours:  Retrofited Fixture System Description NO RETROFIT INSTALL AERATOR INSTALL AERATOR 1.6 GPF TANK TYPE TOILET		ge Fixtures  YR Quantity  1  1  YR: 2  YR: 2	Water Leaks Eliminated LPY 0 0 212.9 212.9
SINK W/ AERATOR SINK W/ AERATOR KITCHEN SINK SERVICE SINK TANK TYPE  RESIDENTIAL TYPE  RESIDENTIAL TYPE  15 RESIDENTIAL TYPE  16 RESIDENTIAL TYPE  17 RESIDENTIAL TYPE  18 RESIDENTIAL TYPE	NO RETROFIT INSTALL AERATOR INSTALL AERATOR 1.6 GPF TANK TYPE TOILET			
SINK W/ AERATOR SINK W/ AERATOR KITCHEN SINK SERVICE SINK  TANK TYPE  RESIDENTIAL TYPE  RESIDENTIAL TYPE  15  RESIDENTIAL TYPE  15  RESIDENTIAL TYPE  15  RESIDENTIAL TYPE	Description NO RETROFIT INSTALL AERATOR INSTALL AERATOR 1.6 GPF TANK TYPE TOILET			
SINK W/ AERATOR  KITCHEN SINK  SERVICE SINK  TANK TYPE  RESIDENTIAL TYPE  15  RESIDENTIAL TYPE  15  RESIDENTIAL TYPE  16  17  18	NO RETROFIT INSTALL AERATOR INSTALL AERATOR 1.6 GPF TANK TYPE TOILET			0 0 212.9 212.9
KITCHEN SINK SERVICE SINK TANK TYPE  RESIDENTIAL TYPE IS RESIDENTIAL TYPE IS RESIDENTIAL TYPE IS	INSTALL AERATOR INSTALL AERATOR 1.6 GPF TANK TYPE TOILET			0 0 212.9 212.9
KITCHEN SINK SERVICE SINK TANK TYPE  RESIDENTIAL TYPE IS RESIDENTIAL TYPE IS	INSTALL AERATOR INSTALL AERATOR 1.6 GPF TANK TYPE TOILET			0 0 212.9 212.9
KITCHEN SINK SERVICE SINK TANK TYPE  RESIDENTIAL TYPE IS RESIDENTIAL TYPE IS RESIDENTIAL TYPE IS	INSTALL AERATOR INSTALL AERATOR  1.6 GPF TANK TYPE TOILET			212.9 212.9 212.9
SERVICE SINK  TANK TYPE  RESIDENTIAL TYPE  15  RESIDENTIAL TYPE  15  16  17  18  19  19  10  10  10  10  10  11  11  12  13  14  15  16  17  18  18  18  18  18  18  18  18  18	INSTALL AERATOR  1.6 GPF TANK TYPE TOILET			212.9
TANK TYPE  RESIDENTIAL TYPE  15  RESIDENTIAL TYPE  16  17  18	1.6 GPF TANK TYPE TOILET			212.9
tank TYPE  RESIDENTIAL TYPE  15  RESIDENTIAL TYPE  15  16  17  18  19  19  10  10  10  10  10  11  11  12  13  14  15  15  16  17  18  18  18  18  18  18  18  18  18	1.6 GPF TANK TYPE TOILET			
RESIDENTIAL TYPE  S  40 GAL NATIONAL				
RESIDENTIAL TYPE  s 40 GAL NATIONAL			_	
RESIDENTIAL TYPE  s 40 GAL NATIONAL			VR. 1	C
RESIDENTIAL TYPE  ds  :			-	
RESIDENTIAL TYPE  ds  : 40 GAL NATIONAL				
RESIDENTIAL TYPE  ds : 40 GAL NATIONAL				
ds RESIDENTIAL TYPE  ds : 40 GAL NATIONAL		LPM   HRS/YR	YR⊱ 0	0
ds : : 40 GAL NATIONAL	9.5 NO RETROFIT	9.5 245	5 1	0
: 40 GAL NATIONAL				
40 GAL NATIONAL	TEMP	TEMP	<b>,</b>	0
Water CAPACITY: ? 334	REDUCE STORAGE TEMP	322 8760	1	
Heater RECOVERY: ?	INSTALL INSUL JACKET	322 8760	0 1	
(GAS)				
-4-10-10-10-10-10-10-10-10-10-10-10-10-10-			+	
ECO6 IOIAL:				0
SYSTEMS CORP	Sveteme Engineering and Management Cornoration	ent Cornor		Knovville TN
	ystems Engineemig and Managem			, - I

Systems Engineering and Management Corporation, Knoxville, TN

	<b>FY94S EEAP FT. KNOX</b>	FT. KNO		ER CON	WATER CONS RVATION STUDY	TUDY	2 OF 2
		/S		ION WO	CALCULATION WORK SHEET 2		
FACILITY NO.:	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
	Gas Rate:	10.51	#WW/		Demand Rate:		\$/KW
ECO Number	Annual Water	Annual	Energy	Saving	WATER	Total	Total
ECO Type	Saving LPY	ELEC KW	ELEC KWH	GAS MWH	Dollar Saving	Dollar Saving	Dollars Invested
1	0			0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
2	289,080			2	\$1.20	\$53.73	\$9.70
Misc. Sinks	47,733			_	\$0.20	\$8.87	\$9.70
	0	,		0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	336,813	0	0	9	\$1.40	\$62.60	\$19.40
3	188,340				\$78.16	\$78.16	\$418.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$418.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
5	0			0	\$0.00	\$0.00	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
9	EST ANNUAL						
Water	HOT WTR			0.89		\$9.37	\$16.80
Heater	CONSUMPTION			7.70		\$80.96	00.09\$
(GAS)	(LITERS)						
	43,946						
ECO6 TOTAL:	43,946	0	0	6	\$0.00	\$90.33	\$76.80
SYSTEMS CORP	ORP			Systems	Engineering and	Systems Engineering and Management Corporation,	poration, Knoxville, TN

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT	T. KN	KNOX WAT CONSERVATION STUDY	S NO	TUDY		1 0
	CALC	CULAT	CALCULATION WORK SHEET 1			DATE:	5 OCT 94
FACILITY NO. :	4270		FUNCTION:	'	UNACCON	M PERS	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY (4BR)		Operating Hours:	'	24 24	5	0
ECO Number	Existing Fixture System		Retrofited Fixture System		Usage	Fixtures	Water Leaks
ECO Type	Description	MdT	Description	LPM	<b>HRS/YR</b>	Quantity	Eliminated LPY
1 System Sinks	SINK W/ AERATOR	9.5	NO RETROFIT	9.5	125	2	
Lavatory Sillins							
ECO1 TOTAL:		LPM		LPM		2	0
2 Min. 6:15.	KITCHEN SINK	9.5	NO RETROFIT	9.2	365	-	0
MISC. SINKS							
ECO2 TOTAL:		LPF		LPF	#FL/YR	ļ	0
3	TANK TYPE	19	1.6 GPF TANK TYPE TOILET	6.1	14600	1	
Water Closets							
ECO3 TOTAL .		<u> </u>		20	#CI \\D	*	
10100		-				-	
Urinals							
ECO4 TOTAL:		LPM		LPM	HRS/YR		0
5	RESIDENTIAL TYPE	9.5	NO RETROFIT	9.5	245	2	0
Shower Heads							
ECO5 TOTAL:		TEMP		TEMP		2	0
9	40 GAL RHEEM						
Water	CAPACITY: ?	325	REDUCE STORAGE TEMP	322	8760	1	
Heater	RECOVERY: ?		INSTALL INSUL JACKET	322	8760	-	
(649)							
ECO6 TOTAL:						1	0

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT. KNOX	T. KNO		ER CON	WATER CONS EVATION STUDY	TUDY	2 OF 2
		Ö	CALCULAT	TION WO	CULATION WORK SHEET 2		
FACILITY NO.:	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
ì	Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
ECO Number	Annual Water	Annual	Energy	Saving	WATER	Total	Total
ECO Tyne	Saving	ELEC	ELEC	GAS	Dollar Saving	Dollar Saving	Dollars Invested
1				0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
3	188,340				\$78.16	\$78.16	\$418.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$418.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
9	EST ANNUAL						
Water	HOT WTR			0.25		\$2.66	
Heater	CONSUMPTION			7.70		\$80.96	\$60.00
(GAS)	(LITERS)						
	43,946						
ECO6 TOTAL:	43,946	0	0	8	\$0.00	\$83.63	\$60.00
SYSTEMS CORP	ORP			Systems	Engineering and	Systems Engineering and Management Corporation,	poration, Knoxville, TN

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT	F. KNOX WATE CONSERVATION STUDY	TIONS	rupy		101
	CALCI	<b>ULATION WORK S</b>			DATE:	5 OCT 94
FACILITY NO.:	4358	FUNCTION:	·	UNACCOM PERS HOU	A PERS	HOUS DET FAC
Occupancy:	FAMILY	Operating Hours:	·	24 24	5 86 LO	0
ECO Number	Existing Fixture System		me	Usage	Fixtures	Water Leaks
ECO Type	Description	V	LPM	HRS/YR	Quantity	Eliminated LPY
1 Lavatory Sinks	SINK W/ AEKA I OK	9.5 NO RETROFII	9.5	125	2	
ECO1 TOTAL:		_	LPM		2	0
2 Misc. Sinks	KITCHEN SINK	9.5 NO RETROFIT	9.5	365	-	0
ECO2 TOTAL:		<b>PP</b>	LPF	#FL/YR	-	0
3	TANK TYPE	19 116 GPF TANK TYPF TOILET	1 6 1	14600	-	
Water Closets					-	
FCOS TOTAL .		<u> </u>	L C		,	
4				#1714	-	0
Urinals						
- ATOT ACOT					í	
ECO4 IDIAL:			~	HRS/YR	0	0
5 Shower Heads	RESIDENTIAL TYPE	9.5 NO RETROFIT	9.5	245	-	0
ECO5 TOTAL:		TEMP	TEMP	land the second	-	0
9	40 GAL RUUD	1				
Water	CAPACITY: ?	334 REDUCE STORAGE TEMP	322	8760	_	
Heater (GAS)	RECOVERY: ?	INSTALL INSUL JACKET	322	8760	-	
ECO6 TOTAL:			5 X X X X X X X X X X X X X X X X X X X	· · · · · · · · · · · · · · · · · · ·	1	0
SYSTEMS CORP		Systems Engineering and Management Corporation,	ment Co	rporation		Knoxville, TN
0						

Systems Engineering and Management Corporation, Knoxville, TN

Water Rate:	CALCULAI  Water Rate: 0.42 \$/KL  Gas Rate: 10.51 \$/MWH  er Annual Water Rwh 0	Water Rate:   0.42 \$/KL   Energy Rate:   S/KWH     Gas Rate:   10.51 \$/KWH   Demand Rate:   S/KWH     Gas Rate:   10.51 \$/KWH   MWH   Demand Rate:   S/KWH     Saving LPY   KW   KWH   MWH   Dollar Saving   S0.00   S0.00		FY94S EEAP FT. KNOX	T. KNO		WATER CONS	S RVATION STUDY	TUDY	2 OF 2
Water Rate:	Water Rate:   0.42   \$/KL     Gas Rate:   10.51   \$/MWH     British	Water Rate:   0.42   \$/KL     Gas Rate:   10.51   \$/MWH     British			장 	LCULAT	ON NO	RK SHEET 2		
Gas Rate:         10.51 \$/MWH         Demand Rate:         \$/MWH         Demand Rate:         \$/MWH           O Ivanial Water         Annual Water         Annual ELEC         GAS         WATER         Total           SO Type         Saving LPY         KWH         MWH         Dollar Saving         Dollar Saving           SO Toty Sinks         0         0         0         \$0.00         \$0.00           St. Sinks         0         0         \$0.00         \$0.00         \$0.00           Sc. Sinks         0         0         \$0.00         \$0.00         \$0.00         \$0.00           Sc. Sinks         0         0         0         \$0.00         \$0	Cas Rate:         10.51         \$/MWH           Number         Annual Water         Annual Energy \$           1         0         ELEC         ELEC           2 O Type         Saving         LPY         KWH           1         0         0         0           1         0         0         0           2 O         0         0         0           2 O         0         0         0           2 O         0         0         0           3 TOTAL:         0         0         0           4 O         0         0         0           TOTAL:         0         0         0           5 O         0         0         0           TOTAL:         0         0         0           TOTAL:         0         0         0           5 O         0         0         0           6 EST ANNUAL         6         6         6           6 EST ANNUAL         0         0           6 GAS)         (LITERS)         0           70TAL:         43,946         0         0           70TAL:         43,946         0 <td>  Cas Rate: 10.51 \$/MWH    </td> <td>FACILITY NO.:</td> <td>Water Rate:</td> <td>0.42</td> <td>\$/KL</td> <td></td> <td>Energy Rate:</td> <td></td> <td>\$/KWH</td>	Cas Rate: 10.51 \$/MWH	FACILITY NO.:	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
O Number         Annual Water         Annual Energy Saving         WATER         Total           10 Type         Saving LPY         KWH         MWH         Dollar Saving         Dollar Saving           10 TotAL:         0         0         0         \$0.00           10 TotAL:         0         0         0         \$0.00           2 Sinks         0         0         \$0.00         \$0.00           3 Sinks         0         0         \$0.00         \$0.00           3 Sinks         0         \$0.00         \$0.00         \$0.00           4 O         0         \$0.00         \$0.00         \$0.00           10 Sinks         0         \$0.00         \$0.00         \$0.00           A O         0         \$0.00         \$0.00         \$0.00           10 Sinks         0         \$0.00         \$0.00         \$0.00           10 Sinks         0         \$0.00         \$0.00         \$0.00           10 Sinks<	Number         Annual Water         Annual ELEC	O Number         Annual Water         Annual ELEC         ELC         ELC         CO         O		Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
20 Type         Saving LPY KWH         KWH KWH         MWH Dollar Saving S0.00         Dollar Saving S0.00           101 Sinks         0         50.00         50.00         50.00           101 Sinks         0         0         0         50.00         50.00           101 Sinks         0         0         0         50.00         50.00         50.00           2 Sinks         0         0         0         50.00	CO Type         Saving LPY LW         ELEC ELEC ELEC ELEC           1         0         0           tory Sinks         0         0         0           TOTAL:         0         0         0           sc. Sinks         0         0         0           TOTAL:         0         0         0           TOTAL:         0         0         0           TOTAL:         0         0         0           TOTAL:         0         0         0           Jrinals         0         0         0           TOTAL:         0         0         0           Formalism         0         0         0           Water         HOT WIR         HOT WIR           Heater         CONSUMPTION         0         0           GAS)         (LITERS)         0         0           A3	CO Type         Saving LPY CW         ELEC ELEC ELEC ELEC           1 0         0         0           1 0         0         0           2 0         0         0           2 0         0         0           2 0         0         0           2 0         0         0           3 188,340         0         0           TOTAL:         0         0           5 0         0         0           TOTAL:         0         0           6 EST ANNUAL         0         0           6 EST ANNUAL         HOT WIR         Heater           CONSUMPTION         0         0           6 EST ANNUAL         0         0           6 EST ANNUAL         0         0           6 GAS)         (LITERS)         43,946           TOTAL:         43,946         0           TOTAL:         43,946         0	ECO Number	Annual Water	Annual	nergy	saving	WATER	Total	Total
tory Sinks 0 0 0 50.00 5	tory Sinks 0  tory Sinks 0  TOTAL: 0  Sc. Sinks 0  TOTAL: 0  TOTAL	tory Sinks 0  TOTAL: 0 0 0 0  2  2 0 0 0 0  2 0 0 0 0  3 188,340 0  TOTAL: 0 0 0  TOTAL: 0 0 0  TOTAL: 43,946 0 0  TOTAL: 43,946 0 0	ECO Type		ELEC	ELEC	GAS	Dollar Saving	Dollar Saving	Dollare Investor
tory Sinks         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00           2         0         0         \$0.00           2         0         0         \$0.00           sc. Sinks         0         0         \$0.00           sc. Sinks         0         0         \$0.00           sc. Sinks         0         0         \$0.00           TOTAL:         0         0         \$0.00           TOTAL:         0         0         \$0.00           TOTAL:         0         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00           Jrinals         0         \$0.00         \$0.00           Jrinals         0         \$0.00         \$0.00           Sound         \$0.00         \$0.00           Soun	tory Sinks 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tory Sinks 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1				0	\$0.00	\$0.00	\$0.00
TOTAL:         0         \$0.00         \$0.00           Sc. Sinks         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           Virials         0         \$0.00         \$0.00         \$0.00           wer Heads         0         \$0.00         \$0.00         \$0.00           5         0         \$0.00         \$0.00         \$0.00           6         EST ANNUAL         0         \$0.00         \$0.00         \$0.00           6         EST ANNUAL         0         \$0.00         \$0.00         \$0.00         \$0.00           6         EST ANNUAL         0         \$0.00         \$0.00         \$0.00         \$0.00	TOTAL:  2	TOTAL:         0         0         0           2         0         0         0           2         0         0         0           3         188,340         0         0           TOTAL:         188,340         0         0           TOTAL:         0         0         0           TOTAL:         0         0         0           F         0         0         0           TOTAL:         0         0         0           F         0         0         0           F         EST ANNUAL         0         0           GAS)         (LITERS)         43,946         0           TOTAL:         43,946         0         0           TOTAL:         43,946         0         0	Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
TOTAL:         0         0         0         \$0.00           2         0         0         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           st Closets         0         \$0.00         \$0.00         \$0.00           er Closets         0         \$0.00         \$0.00         \$0.00           er Closets         0         \$0.00         \$0.00         \$0.00           or CLOTAL:         188,340         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           wer Heads         0         \$0.00         \$0.00         \$0.00           wer Heads         0         0         \$0.00         \$0.00           For DAL:         0         0         \$0.00         \$0.00           for Sound         \$0.00         \$0.00         \$0.00         \$0.00           for Sound         \$0.00         \$0.00         \$0.00         \$0.00           for Sound         \$0.00	TOTAL:         0         0         0           2         0         0         0           Sc. Sinks         0         0         0           Sc. Sinks         0         0         0           TOTAL:         0         0         0           TOTAL:         0         0         0           TOTAL:         0         0         0           TOTAL:         0         0         0           Formals         0         0         0           TOTAL:         0         0         0           Formals         0         0         0           GAS         (LITERS)         0         0           GAS)         (LITERS)         0         0           TOTAL:         43,946         0         0         0           TOTAL:         43,946         0         0         0	TOTAL:         0         0         0           2         0         0         0           2         0         0         0           Sc. Sinks         0         0         0           TOTAL:         0         0         0           Ser Closets         0         0         0           TOTAL:         0         0         0           TOTAL:         0         0         0           TOTAL:         0         0         0           wer Heads         0         0         0           Formal         0         0         0           Formal         HOT WIR         HOT WIR           Heater         CONSUMPTION         CLITERS)           (GAS)         (LITERS)         43,946         0           TOTAL:         43,946         0         0		0			0	\$0.00	\$0.00	\$0.00
s         0         \$0.00         \$0.00           s         0         \$0.00         \$0.00           s         0         \$0.00         \$0.00           s         \$0.00         \$0.00         \$0.00           s         \$0.00         \$0.00         \$0.00           s         \$0         \$0.00         \$0.00           s         \$0         \$0.00         \$0.00           s         \$0         \$0.00         \$0.00           d         \$0         \$0.00         \$0.00           d         \$0         \$0.00         \$0.00           s         \$0         \$0.00         \$0.00           s         \$0.00         \$0.00         \$0.00           s         \$	s 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	s 0 0 0 0 0 0 188,340 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
s         0         \$0.00         \$0.00           st         0         \$0.00         \$0.00           to         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           ts         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WIR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$0.00         \$0.00           43,946         \$0.00         \$0.00         \$0.00	s 0 0 0 0 0 188,340 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	s 0 0 0 0 0 0 0 188,340 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2	0			0	\$0.00	\$0.00	\$0.00
0         0         \$0.00         \$0.00           ts         0         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00         \$0.00           ts         0         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00         \$0.00           ds         0         0         \$0.00         \$0.00           EST ANNUAL         0.89         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           (LITERS)         \$0.00         \$0.00         \$0.00           43,946         \$0.00         \$0.00         \$0.00	o 0 0 0 0 188,340 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 188,340 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
its         0         0         \$0.00         \$0.00           its         0         \$78.16         \$78.16         \$78.16           its         0         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00         \$0.00           est Annual         \$0.00         \$0.00         \$0.00         \$0.00           HOT WIR         0.89         \$0.00         \$0.00         \$0.00           (LITERS)         7.70         \$0.00         \$0.00           43,946         \$0.00         \$0.00         \$0.00	ts 0 0 0 0 1 188,340 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ts 0 0 0 0 0 188,340 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0			0	\$0.00	\$0.00	\$0.00
its         \$78.16         \$78.16           its         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WIR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96           43,946         0         0         \$0.00	ts 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	188,340	ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
tfs         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         \$0.00         \$0.00         \$0.00           ds         \$0         \$0.00         \$0.00           ds         \$0         \$0.00         \$0.00           EST ANNUAL         \$0.89         \$0.00         \$0.00           HOT WTR         \$0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$0.00         \$0.00           43,946         \$0         \$0         \$0.00         \$0.00	ts 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tts 0 0	3	188,340				\$78.16	\$78.16	\$418.80
0         \$0.00         \$0.00           188,340         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           ds         \$0.00         \$0.00           ds         \$0.00         \$0.00           EST ANNUAL         \$0.00         \$0.00           HOT WTR         0.89         \$0.00           CONSUMPTION         7.70         \$80.96           43,946         0         \$0.00         \$0.00	0 0 0 0 0 0 0 0 0 0 0 EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 0 0	0 0 0 0 0 0 0 0 0 0 0 EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 0 0	Water Closets	0				\$0.00	\$0.00	\$0.00
188,340         \$78.16         \$78.16           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           (LITERS)         7.70         \$89.37           43,946         6.00         \$0.00         \$0.00	188,340   0   0   0   0   0   0   0   0   0	188,340   0   0   0   0   0   0   0   0   0		0				\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           est Annual         0         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96           43,946         0         6.60.00	0 0 0 0 0 0 0 0 ANNUAL 0 0 0 0 ANNUAL SUMPTION TTERS) 3,946 0 0	0 0 0 0 0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0	ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$418.80
0         \$0.00         \$0.00           0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           est annual         0         \$0.00         \$0.00           HOT WIR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96           43,946         0         0         60.89	0 0 0 0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0	0 0 0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 3,946 0 0	4	0				\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.00           0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.37           CONSUMPTION         7.70         \$80.96           43,946         6.00         6.00	0 0 0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0	0 0 0 0 0 0 ANNUAL TWTR SUMPTION ITERS) 3,946 3,946 0 0	Urinals	0				\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           eST ANNUAL         0.89         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.37           CONSUMPTION         7.70         \$80.96           (LITERS)         6.89         \$80.96           43,946         6.89         \$60.00	0 0 0 0 0 ANNUAL TWTR SUMPTION ITERS) 3,946 0 0	0 0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0		0				\$0.00	\$0.00	\$0.00
ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           0         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.89         \$9.37           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946	0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0	0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 3,946 0 0	ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
ds         0         \$0.00         \$0.00           0         0         \$0.00         \$0.00           EST ANNUAL         0.89         \$0.00         \$0.00           HOT WTR         0.89         \$9.37           CONSUMPTION         7.70         \$80.96           43,946         6.65         \$6.03	0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0	0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 3,946 0 0	2	0			0	\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.00           0         0         \$0.00         \$0.00           EST ANNUAL         0.89         \$0.00           HOT WTR         0.89         \$9.37           CONSUMPTION         7.70         \$80.96           (LITERS)         6.00         6.00	0 0 0 ANNUAL 0 0 0 T WTR SUMPTION 17ERS) 3,946 0 0	0 0 0 ANNUAL 0 0 0 T WTR SUMPTION ITERS) 3,946 0 0	Shower Heads	0			0	\$0.00	\$0.00	\$0.00
0         0         \$0.00         \$0.00           EST ANNUAL         0.89         \$9.37           HOT WTR         7.70         \$80.96           CONSUMPTION         7.70         \$80.96           (LITERS)         6.03         6.03           43,946         6.03         6.03	0 0 0 ANNUAL DT WTR SUMPTION ITERS) 3,946 0 0	0 0 0 ANNUAL DI WTR SUMPTION ITERS) 3,946 0 0		0			0	\$0.00	\$0.00	\$0.00
EST ANNUAL         0.89         \$9.37           HOT WTR         7.70         \$80.96           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946         60.33	ANNUAL  OT WTR  SUMPTION  ITERS)  3,946  0  0	ANNUAL  T WTR  SUMPTION  TERS)  3,946  3,946  0  0		0	0	0	0	\$0.00	\$0.00	\$0.00
HOT WTR         0.89         \$9.37           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946         60.93	3,946 0 0	3,946 0 0	9	EST ANNUAL						
CONSUMPTION   7.70   \$80.96	3,946 0 0	3,946 0 0	Water	HOT WTR		•	0.89		\$9.37	
(LITERS) 43,946	3,946 0 0	3,946 0 0	Heater	CONSUMPTION			7.70		\$80.96	\$60.00
43,946	3,946 3,946 0 0	3,946 3,946 0 0	(GAS)	(LITERS)						
42045 0 0 0 0 000	3,946 0 0	3,946 0 0		43,946						
45,940 0 0 490.33			ECO6 TOTAL:	43,946	0	0	6	\$0.00	\$90.33	\$60.00

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT.	. KNOX WAT	CONSERVATION STUDY	IS NO	ruby		10
		ULATION WORK	ET 1			DATE:	5 OCT 94
FACILITY NO.:	4363 B		FUNCTION:	<b>-</b> 1⊩	INACCON	UNACCOM PERS HOUS	HOUS DET FAC
Occupancy:	FAMILY	Opera	Operating Hours:	-	24 24	77 40 U	0
ECO Number	e System	Ц	Retrofited Fixture System	П	Usage	Fixtures	Water Leaks
ECO Type		티	tion		HRS/YR	Quantity	Eliminated LPY
	SINK W/ AERATOR	9.5 NO RETROFIT		9.5	125	<b></b>	
Lavatory Sinks							
ECO1 TOTAL:		LPM		LPM		1	0
2	KITCHEN SINK	9.5 NO RETROFIT		9.5	365	-	0
Misc. Sinks							
ECO2 TOTAL:		LPF		LPF	#FL/YR	-	0
3	TANK TYPE	1.6 GPF TANK	TYPE TOILET	6.1	14600	1	
Water Closets							
		ı		Ľ	7/V	,	
ECO3 TOTAL:		17T		귀	#FLYR	_	0
4							
Urinals							
FOOT TOTAL		NO.	**	MO	ups/vp	c	C
ECO4 101AL.		-1			N 1/2	,	
2	RESIDENTIAL TYPE	9.5 NO RETROFIT		9.5	245		0
Shower Heads				-			
ECO5 TOTAL:		TEMP		TEMP		-	0
9	40 GAL RHEEM/FURY						
Water	ITY: ?	325 REDUCE STORAGE	AGE TEMP	322	8760	_	
Heater	. ?	INSTALL INSUL	JACKET	322	8760	_	
(GAS)							
ECO6 TOTAL:						-	0
			1				
S SYSTEMS CORP		Systems Engineering and Management Corporation,	and Managen	nent Co	rporation		Knoxville, TN
3 -3							
3.2							

FACILITY NO.: Water Rat 4363 B Gas Rate: ECO Number Annual V	CAL Water Rate: 0.42	CAL 0.42		<b>CULATION WORK</b>	CULATION WORK SHEET 2		
5	r Rate:	0.42					
	I		\$/KL		Energy Rate:		\$/KWH
	Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
	Annual Water	Annual	Energy :	Saving	WATER	Total	Total
ECO Type Saving	ina LPY	ELEC	ELEC	GAS	Dollar Saving	Dollar Saving	Dollars Invested
	l			0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
	188,340				\$78.16	\$78.16	\$418.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL: 18	188,340				\$78.16	\$78.16	\$418.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
183 <b>9</b> EST	EST ANNUAL						
Water HC	HOT WTR			0.25		\$2.66	
Heater CONS	CONSUMPTION			02'2		\$80.96	\$60.00
(CAS)	(LITERS)						
	43,946						
ECO6 TOTAL: 4:	43,946	0	0	8	\$0.00	\$83.63	\$60.00
<b>SYSTEMS CORP</b>				Systems	Engineering and	d Management Cor	Systems Engineering and Management Corporation, Knoxville, TN

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT.		KNOX WAT CONSERVATION STUDY	S NOI	TUDY		1 0/
	CAL	CULAT	CALCULATION WORK SHEET 1			DATE:	5 OCT 94
FACILITY NO.:	5314 D		FUNCTION:	<b>,.</b>	UNACCOM PERS HOUS	A PERS	HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:	·	24		
ECO Number	Existing Fixture System	1 1	Retrofited Fixture System		Usage	Fixtures	Water Leaks
ECO Type	Description		Description	LPM	HRS/YR	Quantity	Eliminated LPY
-	SINK W/ AERATOR	9.5	NO RETROFIT	9.5	125	2	
Lavatory Sinks							
ECO4 TOTAL.		Md		Md		2	0
2	KITCHEN SINK	9.5	NO RETROFIT	9.5	365	-	0
Misc. Sinks							
		1		i d		,	
ECO2 TOTAL:		LPF		LPF	#FLIYK	-	0
3 Water Closets	TANK TYPE	19	1.6 GPF TANK TYPE TOILET	6.1	14600	-	
ECO3 TOTAL:		LPF		LPF	#FL/YR	7	0
4							
Urinals							
ECO4 TOTAL:		LPM		LPM	HRS/YR	0	0
5	RESIDENTIAL TYPE	9.5	NO RETROFIT	9.5	245	-	55640
Shower Heads							
ECO5 TOTAL :		TEMP		TEMP		1	55640
9	40 GAL FURY						
Water	CAPACITY: ?	334	REDUCE STORAGE TEMP	322	8760	_	
Heater	RECOVERY: ?		INSTALL INSUL JACKET	322	8760	-	
(GAS)							
ECO6 TOTAL:		13.1		5 **		1	0

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT. KNOX	FT. KNO		WATER CONS	SVATION STUDY	TUDY	2 OF 2
		/C	CALCULAT	ION WO	<b>CULATION WORK SHEET 2</b>		
FACILITY NO.: 5314 D	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
) - - - )	Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
ECO Number	Annual Water	Annual		Saving	WATER	Total	Total
ECO Type	Saving LPY	ELEC KW		GAS MWH	Dollar Saving	Dollar Saving	Dollars Invested
1	ŀ			0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	00'0\$
Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	00.0\$
3	188,340				\$78.16	\$78.16	\$418.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$418.80
4	0				\$0.00	\$0.00	00.0\$
Urinals	0				\$0.00	\$0.00	00.0\$
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
5	55,640			96	\$23.09	\$1,034.18	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	55,640	0	0	96	\$23.09	\$1,034.18	\$0.00
9	EST ANNUAL						
Water	HOT WTR			0.89		\$9.37	
Heater	CONSUMPTION			7.70		\$80.96	\$60.00
(GAS)	(LITERS)						
	43,946						
ECO6 TOTAL:	43,946	0	0	6	\$0.00	\$90.33	\$60.00
SYSTEMS C	CORP			Systems	s Engineering and	Systems Engineering and Management Corporation,	poration, Knoxville, TN

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FI	T. KN	F. KNOX WAT CONSERVATION STUDY	S NOI	TUDY		10
	CAL	CULAT				DATE:	5 OCT 94
FACILITY NO. :	5475 D		FUNCTION:	·	UNACCOM PERS HOUS	A PERS	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:	·	24 24		0
ECO Number	Existing Fixture System		Retrofited Fixture System	Ε	Usage	Fixtures	Water Leaks
ECO Type	Description	LPM		LPM	HRS/YR	Quantity	Eliminated LPY
1 Lavatory Sinks	SINK W/ AEKATOK	G.9	NO RETRUPIT	9.5	671	7	
ECO4 TOTAL		WC -		DAM	100	c	c
2	KITCHEN SINK	9.5	NO RETROFIT	9.5	365	1	0
Misc. Sinks							
ECO2 TOTAL:		LPF		LPF	#FL/YR	-	0
3	TANK TYPE	19	1.6 GPF TANK TYPE TOILET	6.1	7300	2	
Water Closets							
ECO3 TOTAL .		<u> </u>		100	: d∧ 1⊒#	6	c
10101		-				7	
Urinals							
- 4 + 0 0 0 1						•	C
ECO4 IOIAL:		LP <sub>B</sub>		LPM	囙	0	0
5 Shower Heads	RESIDENTIAL TYPE	9.5	NO RETROFIT	9.5	245	~	0
ECO5 TOTAL:		TEMP		TEMP		-	0
9	40 GAL A. O. SMITH						
Water	CAPACITY: ?	334	REDUCE STORAGE TEMP	322	8760	-	
(GAS)			INOTALL INOUL JACKET	226	0070	-	
ECO6 TOTAL:				3. 3. 1.		-	0

SYSTEMS CORP

Mater Rate:	Mater Rate:	Nater Rate:		FY94S EEAP FT. KNOX	T. KNO		WATER CONS	RVATION STUDY	TUDY	2 OF 2
Mater Rate:   0.42   \$/KL   Energy Rate:   5/KW   Energy Rate:   10.51   \$/MWH   Energy Saving   MATER   Total   ELEC   ELEC   GAS   60.00   50.00	Water Rate:	Water Rate: 0.42 \$/KL			CA		IOM NOI	RK SHEET 2		
O Number         Annual Water         Annual ELEC         GAS         MATER         Total           CO Type         Saving LPY         KWH         MWH         Dollar Saving         Dollar Saving         Dollar Saving           LOType         Saving LPY         KWH         MWH         Dollar Saving         Dollar Saving         S0.00           TOTAL:         0         0         0         \$0.00         \$0.00         \$0.00           Sc. Sinks         0         0         \$0.00         \$0.00         \$0.00         \$0.00           Er Closets         0         0         \$0.00         \$0.00         \$0.00         \$0.00           Urinals         0         0	O Number         Annual Water         Annual Energy Saving ELEC         GAS         MANTER         Total           20 Type         Saving LPY         KWH         MWH         Dollar Saving S0.00         \$0.00           10 Type         Saving LPY         KWH         MWH         Dollar Saving S0.00         \$0.00           10 Type         Saving LPY         KWH         MWH         Dollar Saving S0.00         \$0.00           10 Type         0         0         0         \$0.00         \$0.00           10 Type         0         0         \$0.00         \$0.00         \$0.00           2 Collection         0         0         \$0.00         \$0.00         \$0.00           2 Collection         0         \$0.00         \$0.00         \$0.00         \$0.00           3 Collection         0         \$0.00         \$0.00         \$0.00         \$0.00           4 O         0         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00           4 O         0         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00           5 O         0         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00           5 O <t< td=""><td>Gas Rate:         10.51         \$/MW/H           D Number         Annual Water         Annual Energy &amp; MWH           1         0         ELEC         <t< td=""><td>FACILITY NO.: 5475 D</td><td>Water Rate:</td><td>0.42</td><td>\$/KL</td><td></td><td>Energy Rate:</td><td></td><td>\$/KWH</td></t<></td></t<>	Gas Rate:         10.51         \$/MW/H           D Number         Annual Water         Annual Energy & MWH           1         0         ELEC         ELEC <t< td=""><td>FACILITY NO.: 5475 D</td><td>Water Rate:</td><td>0.42</td><td>\$/KL</td><td></td><td>Energy Rate:</td><td></td><td>\$/KWH</td></t<>	FACILITY NO.: 5475 D	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
O Number         Annual Water         Annual Energy Saving         WATER         Total           CO Type         Saving LPY         KWH         MWH         Dollar Saving         No.00           CO Type         Saving LPY         KWH         MWH         Dollar Saving         No.00           ttory Sinks         0         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00         \$0.00           rotal         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00	O Number         Annual Water         Annual Energy Saving ELEC         GAS ELLEC         GAS ELLEC </td <td>O Number         Annual Water         Annual ELEC         EL</td> <td>:</td> <td>Gas Rate:</td> <td>10.51</td> <td>\$/MWH</td> <td></td> <td>Demand Rate:</td> <td></td> <td>\$/KW</td>	O Number         Annual Water         Annual ELEC         EL	:	Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
CO Type         Saving LPY KW KWH KWH Pollar Saving 1         ELEC RLEC RAS ROUG         GAS SOUGO SOUGO	CO Type         Saving LPY         FLEC NWH         MWH         Dollar Saving Saving Su.00         P.0.00           10 York Sinks         0         0         \$0.00         \$0.00         \$0.00           10 Scinks         0         0         \$0.00         \$0.00         \$0.00         \$0.00           10 Scinks         0         0         0         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00 <td< td=""><td>CO Type         Saving LPY LPY KW         ELEC ELEC ELEC LP           1         0         0           1         0         0           1         0         0           1         0         0           2         0         0           2         0         0           2         0         0           3         188,340         0           4         0         0           1         188,340         0           4         0         0           1         188,340         0           4         0         0           1         0         0           1         0         0           1         0         0           5         0         0           6         ESTANNUAL         0           6</td><td>ECO Number</td><td>Annual Water</td><td>Annual</td><td>nergy</td><td>Saving</td><td>WATER</td><td>Total</td><td>Total</td></td<>	CO Type         Saving LPY LPY KW         ELEC ELEC ELEC LP           1         0         0           1         0         0           1         0         0           1         0         0           2         0         0           2         0         0           2         0         0           3         188,340         0           4         0         0           1         188,340         0           4         0         0           1         188,340         0           4         0         0           1         0         0           1         0         0           1         0         0           5         0         0           6         ESTANNUAL         0           6	ECO Number	Annual Water	Annual	nergy	Saving	WATER	Total	Total
1 tory Sinks         0         0         50.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           sc. Sinks         0         \$0.00         \$0.00         \$0.00           sc. Sinks         0         \$0.00         \$0.00         \$0.00           arc Closets         0         \$0.00         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00           4         0         \$0.00         \$0.00         \$0.00           5         0         \$0.00         \$0.00         \$0.00           5         0         \$0.00 <th< td=""><td>1 For All Properties         1         2         1         2         1         2         1         2         1         2         1         2         1         2</td><td>tory Sinks 0  ttory Sinks 0  TOTAL: 0  sc. Sinks 0  TOTAL: 43,946  TOTAL: 43,946</td><td>ECO Type</td><td></td><td>ELEC</td><td>ELEC</td><td>GAS</td><td>Dollar Saving</td><td>Dollar Saving</td><td>Dollare Invested</td></th<>	1 For All Properties         1         2         1         2         1         2         1         2         1         2         1         2         1         2	tory Sinks 0  ttory Sinks 0  TOTAL: 0  sc. Sinks 0  TOTAL: 43,946  TOTAL: 43,946	ECO Type		ELEC	ELEC	GAS	Dollar Saving	Dollar Saving	Dollare Invested
ttory Sinks         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00           sc. Sinks         0         0         0         \$0.00           sc. Sinks         0         0         0         \$0.00           sc. Sinks         0         0         0         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           ser Closets         0         \$0.00         \$0.00         \$0.00           arc Closets         0         \$0.00         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           ser Heads         0         \$0.00         \$0.00         \$0.00           F         0         \$0.00         \$0.00         \$0.00           F         0         \$0.00         \$0.00         \$0.00           F         0         \$0.00         \$0.00         \$0.00 </td <td>ttory Sinks         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           sc. Sinks         0         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00         \$0.00           er Closets         0         0         \$0.00         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00         \$0.00           5         0         \$0.00         \$0.00         \$0.00         \$0.00           5         0         0         \$0.00         \$0.00         \$0.00           6         EST ANNUAL         0         0         \$0.00         \$0.00</td> <td>ttory Sinks 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>1</td> <td></td> <td></td> <td></td> <td>0</td> <td>\$0.00</td> <td>\$0.00</td> <td>\$0.00</td>	ttory Sinks         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           sc. Sinks         0         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00         \$0.00           er Closets         0         0         \$0.00         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00         \$0.00           5         0         \$0.00         \$0.00         \$0.00         \$0.00           5         0         0         \$0.00         \$0.00         \$0.00           6         EST ANNUAL         0         0         \$0.00         \$0.00	ttory Sinks 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1				0	\$0.00	\$0.00	\$0.00
TOTAL:         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00           Sc. Sinks         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           ar Closets         0         0         \$0.00         \$0.00           er Closets         0         0         \$0.00         \$0.00           Er Closets         0         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           Urinals         0         \$0.00         \$0.00         \$0.00           Virinals         0         \$0.00         \$0.00         \$0.00           F         0         \$0.00         \$0.00         <	TOTAL:         0         \$0.00         \$0.00         \$0.00           Sc. Sinks         0         0         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00           sc. Sinks         0         0         0         \$0.00           TOTAL:         0         0         0         \$0.00           ser Closets         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           Uninals         0         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           Very Heads         0         0         \$0.00         \$0.00           Very Heads         0         0         \$0.00         \$0.00           F         0         0         \$0.00         \$0.00           Mater         HOT WINN         \$0.00         \$0.00         \$0.00           G         EST ANNU         7.70         \$0.00	TOTAL:  2	Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
TOTAL:         0         0         50.00         \$0.00           2         0         0         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00           Sc. Sinks         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           ar Closets         0         \$0.00         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           F         0         \$0.00         \$0.00         \$0.00           Wer Heads         0         \$0.00         \$0.00         \$0.00           F         FOTAL:         0         \$0.00         \$0.00         \$0.00           Water         HOT WITR         0         \$0.00         \$0.00         \$0.00           GAS)	TOTAL:         0         0         0         \$0.00           2         0         0         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           3         188,340         0         \$0.00         \$0.00           sc Closets         0         0         \$0.00         \$0.00           er Closets         0         0         \$0.00         \$0.00           g cr Closets         0         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           LOTAL:         0         \$0.00         \$0.00         \$0.00           b         0         \$0.00         \$0.00         \$0.00	TOTAL:         0         0         0           2         0         0         0           2         0         0         0           Sc. Sinks         0         0         0           TOTAL:         0         0         0           TOTAL:         0         0         0           TOTAL:         0         0         0           TOTAL:         0         0         0           Wer Heads         0         0         0           TOTAL:         0         0         0           TOTAL:         0         0         0           Water         HOT WIR         HOT WIR           Heater         CONSUMPTION         (GAS)           (GAS)         (LITERS)         0           TOTAL:         43,946         0         0           TOTAL:         43,946         0         0		0			0	\$0.00	\$0.00	\$0.00
s         0         \$0.00         \$0.00           s         0         \$0.00         \$0.00           s         0         \$0.00         \$0.00           t         0         \$0.00         \$0.00           t         \$0.00         \$0.00         \$0.00           t         \$0         \$0.00         \$0.00           t         \$0         \$0.00         \$0.00           t         \$0         \$0.00         \$0.00           t         \$0         \$0.00         \$0.00           t         \$0.00         \$0.00         \$0.00           t <th< td=""><td>s         0         \$0.00         \$0.00           s         0         \$0.00         \$0.00           to         0         \$0.00         \$0.00           ts         \$0.00         \$0.00         \$0.00           to         \$0.00         \$0.00         \$0.00           ds         \$0.00         \$0.00         \$0.00           th         \$0         \$0.00         \$0.00           to         \$0.00         \$0.00         \$0.00           th         \$0.00         \$0.00         \$0.00           th<!--</td--><td>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>ECO1 TOTAL:</td><td>0</td><td>0</td><td>0</td><td>0</td><td>\$0.00</td><td>\$0.00</td><td>\$0.00</td></td></th<>	s         0         \$0.00         \$0.00           s         0         \$0.00         \$0.00           to         0         \$0.00         \$0.00           ts         \$0.00         \$0.00         \$0.00           to         \$0.00         \$0.00         \$0.00           ds         \$0.00         \$0.00         \$0.00           th         \$0         \$0.00         \$0.00           to         \$0.00         \$0.00         \$0.00           th         \$0.00         \$0.00         \$0.00           th </td <td>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>ECO1 TOTAL:</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>\$0.00</td> <td>\$0.00</td> <td>\$0.00</td>	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
s         0         \$0.00         \$0.00           t         0         \$0.00         \$0.00           t         0         \$0.00         \$0.00           t         \$0.00         \$0.00         \$0.00           t         0         \$0.00         \$0.00           t         \$0.00         \$0.00         \$0.00           t	s         0         \$0.00         \$0.00           c         0         \$0.00         \$0.00           t         0         \$0.00         \$0.00           t         \$0.00         \$0.00         \$0.00           t         \$0         \$0.00         \$0.00           t         \$0.00         \$0.00         \$0.00           t <t< td=""><td>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>2</td><td>0</td><td></td><td></td><td>0</td><td>\$0.00</td><td>\$0.00</td><td>\$0.00</td></t<>	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2	0			0	\$0.00	\$0.00	\$0.00
0         0         \$0.00         \$0.00           to         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           to         \$0.00         \$0.00         \$0.00           to         \$0.00         \$0.00         \$0.00           to         \$0.00         \$0.00         \$0.00           to         \$0.00         \$0.00           to         \$0.00         \$0.00         \$0.00           to <th< td=""><td>0         0         \$0.00         \$0.00           to         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         \$0.00         \$0.00         \$0.00           EST ANNUAL         \$0.00         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$0.00         \$0.00           43,946         0         \$0.00         \$0.00           43,946         0         \$0.00         \$0.00</td><td>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td><td>Misc. Sinks</td><td>0</td><td></td><td></td><td>0</td><td>\$0.00</td><td>\$0.00</td><td>\$0.00</td></th<>	0         0         \$0.00         \$0.00           to         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         \$0.00         \$0.00         \$0.00           EST ANNUAL         \$0.00         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$0.00         \$0.00           43,946         0         \$0.00         \$0.00           43,946         0         \$0.00         \$0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
ts         0         0         \$0.00         \$0.00           ts         188,340         \$0.00         \$0.00         \$0.00           ts         0         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00         \$0.00           ESTANNUAL         0         \$0.00         \$0.00         \$0.00           HOT WIR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$0.89         \$0.00           (LITERS)         7.70         \$0.00         \$0.00           43,946         7.70         \$0.00         \$0.00	ts         0         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00         \$0.00           ts         0         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00         \$0.00           ds         \$0.00         \$0.00         \$0.00         \$0.00           EST ANNUAL         \$0.00         \$0.00         \$0.00         \$0.00           HOT WIR         \$0.89         \$0.00         \$0.00         \$0.00           43,946         \$0.00         \$0.00         \$0.00         \$0.00           43,946         \$0.00         \$0.00         \$0.00         \$0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0			0	\$0.00	\$0.00	\$0.00
ts         188,340         \$78.16         \$78.16           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WITE         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96	ts         \$78.16         \$78.16           ts         0         \$0.00         \$0.00           to         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         \$0.00         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00         \$0.00           HOT WITR         0.89         \$0.00         \$0.00         \$0.00           (LITERS)         7.70         \$0.00         \$0.00           43,946         0         9         \$0.00         \$0.00	88,340 0 0 88,340 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 ITERS) 3,946 0 0 0 3,946	ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
ts         0         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           EST ANNUAL         0.89         \$0.00         \$0.00           HOT WIR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96	ts         0         \$0.00         \$0.00           to         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$0.00         \$0.00           43,946         0         9         \$0.00         \$0.00           43,946         0         9         \$0.00         \$0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3	188,340				\$78.16	\$78.16	\$838.80
0         \$0.00         \$0.00           188,340         \$78.16         \$78.16           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           4s         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           eST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.90         \$80.37           (LITERS)         7.70         \$80.90         \$80.90	0         \$0.00         \$0.00           188,340         \$78.16         \$78.16           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           4         \$0         \$0         \$0.00           0         \$0         \$0.00         \$0.00           0         \$0         \$0.00         \$0.00           EST ANNUAL         \$0.89         \$0.00         \$0.00           HOT WIR         \$0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96         \$0.37           43,946         0         9         \$0.00         \$90.33	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Water Closets	0				\$0.00	\$0.00	\$0.00
188,340         \$78.16         \$78.16           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           eST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           (LITERS)         7.70         \$80.96         \$80.96           (LITERS)         7.70         \$80.96         \$80.96	188,340         \$78.16         \$78.16           0         0         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         0         \$0.00         \$0.00           est annual         0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00         \$0.00           HOT WITR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96         \$0.37           43,946         0         9         \$0.00         \$90.33	18,340 0 0 0 0 0 0 0 0 0 0 0 0 0 XNNUAL OT WTR SUMPTION ITERS) 3,946 0 0 0 0 3,946		0				\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           0         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WIR         0         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96           43,946         0         0         \$0.00	0         \$0.00         \$0.	0 0 0 0 0 0 0 0 ANNUAL 5T WTR SUMPTION TERS) 3,946 0 0	ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$838.80
0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96           43,946         1         1	0         \$0.00         \$0.00           0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           do         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96           43,946         0         9         \$0.00         \$90.33	0 0 0 0 0 0 0 ANNUAL 0 0 0 1TERS) 3,946 0 0	4	0				\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.00           0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           est Annual         0         \$0.00         \$0.00           HOT WIR         0.89         \$0.00         \$0.37           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96           43,946         1         1	0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00         \$0.00           0         0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0.89         \$0.00         \$0.00         \$0.00           HOT WIR         0.89         \$0.00         \$0.37         \$0.00           CONSUMPTION         7.70         \$80.96         \$0.37           43,946         0         9         \$0.00         \$0.03	0 0 0 0 0 ANNUAL 0 0 0 3,946 3,946 0 0	Urinals	0				\$0.00	\$0.00	\$0.00
ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           d         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WITR         0.89         \$0.00         \$0.37           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96           43,946         0         \$0.00         \$0.00	ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           d         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96         \$43,946         \$0         9         \$0.00         \$90.33	0 0 0 0 0 ANNUAL 5T WTR SUMPTION ITERS) 3,946 0 0		0				\$0.00	\$0.00	\$0.00
ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           0         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.89         \$0.37           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96           43,946         1         1	ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           0         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00         \$0.00           HOT WIR         0.89         \$0.00         \$0.37         \$0.00           CONSUMPTION         7.70         \$80.96         \$0.43,946         \$0         \$0.00 <td>0 0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 3,946 0 0</td> <td>ECO4 TOTAL:</td> <td>0</td> <td></td> <td></td> <td></td> <td>\$0.00</td> <td>\$0.00</td> <td>\$0.00</td>	0 0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 3,946 0 0	ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
ds         0         \$0.00         \$0.00           0         0         \$0.00         \$0.00           EST ANNUAL         \$0.00         \$0.00         \$0.00           HOT WTR         0.89         \$9.37           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946	ds         0         \$0.00         \$0.00           0         0         \$0.00         \$0.00           est annual         0         \$0.00         \$0.00           HOT WIR         0.89         \$9.37           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96           43,946         0         \$0.00         \$0.00	0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 3,946 0 0	5	0			0	\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.00           0         0         \$0.00         \$0.00           EST ANNUAL         0.89         \$9.37           HOT WTR         7.70         \$80.96           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946         80.00	0         0         \$0.00 </td <td>0 0 0 0 ANNUAL 0 0 0 3,946 3,946 0 0</td> <td>Shower Heads</td> <td>0</td> <td></td> <td></td> <td>0</td> <td>\$0.00</td> <td>\$0.00</td> <td>\$0.00</td>	0 0 0 0 ANNUAL 0 0 0 3,946 3,946 0 0	Shower Heads	0			0	\$0.00	\$0.00	\$0.00
0         0         \$0.00         \$0.00           EST ANNUAL         0.89         \$9.37           HOT WTR         7.70         \$80.96           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946	0         0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0.89         \$9.37           HOT WTR         7.70         \$80.96           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946         9         \$0.00         \$90.33	0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0		0			0	\$0.00	\$0.00	\$0.00
EST ANNUAL       0.89       \$9.37         HOT WTR       7.70       \$80.96         CONSUMPTION       7.70       \$80.96         (LITERS)       43,946	EST ANNUAL         0.89         \$9.37           HOT WTR         7.70         \$80.96           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946         9         \$0.00         \$90.33	ANNUAL  T WTR  SUMPTION  TERS)  3,946  3,946  0  0	ECO5 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
HOT WTR         0.89         \$9.37           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946	HOT WTR         0.89         \$9.37           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946         0         \$90.33	3,946 0 0	9	EST ANNUAL						
CONSUMPTION         7.70         \$80.96           (LITERS)         43,946	CONSUMPTION         7.70         \$80.96           (LITERS)         43,946         0         9         \$0.00         \$90.33	3,946 0 0	Water	HOT WTR			0.89		\$9.37	
(LITERS) 43,946	(LITERS) 43,946 43,946 0 0 9 \$0.00 \$90.33	3,946 0 0	Heater	CONSUMPTION			7.70		\$80.96	\$60.00
0110	43,946 0 0 9 \$0.00 \$90.33	3,946 0 0	(GAS)	(LITERS)						
	43,946 0 0 9 \$0.00 \$90.33	3,946 0 0		43,340						

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT.		KNOX WAT CONSERVATION STUDY	S NO!	TUDY		10
	CALCU		Σ			DATE:	5 OCT 94
FACILITY NO. :	7549 A&B		FUNCTION:	<b>-</b> II	JNACCO	M PERS	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:	1	24 24		0
ECO Number	Existing Fixture System		Retrofited Fixture System	٤	Usage		Water Leaks
ECO Type	Description	LPM	Description	LPM	HRS/YR	Quantity	Eliminated LPY
1 Lavatory Sinks	SINK W/ AERATOR	9.5	NO RETROFIT	9.5	125	-	
ECO1 TOTAL:		LPM		MdT		1	0
2 Misc. Sinks	KITCHEN SINK	9.5	NO RETROFIT	9.5	365	~	0
ECO2 TOTAL:		LPF		L PF	#FL/YR	-	0
10001		i			1000		
3 Water Closets	ANK IYPE	19	1.6 GPF IANK IYPE IOILEI	0.7	/300	7	
ECO3 TOTAL .		10		<u> </u>	#EI WB	2	C
4		i		1		1	
Urinals							
ECO4 TOTAL:		LPM		LPM	HRS/YR	0	0
Shower Heads	RESIDENTIAL TYPE	9.5	NO RETROFIT	9.5	245	-	0
<b>ECO5 TOTAL:</b>		TEMP		TEMP		1	0
9	40 GAL RHEEM/FURY #354	224	DEDLICE STORAGE TEMP	000	0320	7	
Water	RECOVERY: 40.3 GAL/H	100	NSTALL INSUL JACKET	322	8760		
(GAS)							
ECO6 TOTAL:						<b>~</b>	0
	Berden deptekter with in street was server was the server with the destriction of the server was the server of						

Systems Engineering and Management Corporation, Knoxville, TN

### PAGE 3 -38

SYSTEMS CORP

	FY94S EEAP FT. KNOX WATER CON	T. KNO	X WATI	ER CON	RVATION STUDY	TUDY	2 OF 2
		CA	LCULA	ION WOI			
FACILITY NO.:	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
	Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
ECO Number	Annual Water	Annual	IJ	Saving	WATER	Total	Total
ECO Type	Saving LPY	ELEC	ELEC KWH	GAS MWH	Dollar Saving	Dollar Saving	Dollars Invested
1	0			0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
3	188,340				\$78.16	\$78.16	\$838.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$838.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
9	EST ANNUAL						
Water	HOT WTR			0.68		\$7.11	
Heater	CONSUMPTION			7.70		\$80.96	\$60.00
(GAS)	(LITERS)						
	43,946						
ECO6 TOTAL:	43,946	0	0	8	\$0.00	\$88.07	\$60.00

Systems Engineering and Management Corporation, Knoxville, TN

SYSTEMS CORP

	FY94S EEAP FT		KNOX WAT CONSERVATION STUDY	S NOI	TUDY		10
	CALC	SULAT	X			DATE:	5 OCT 94
FACILITY NO. :	7750 A		FUNCTION:		UNACCOL	M PERS	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:	,	24		)
ECO Number	Existing Fixture System	П	Retrofited Fixture System	E	Usage	Fixtures	Water Leaks
ECO Type	Description SINK W// AFRATOR	LPM o 5	Description	LPM o 5	HRS/YR	Quantity	Eliminated LPY
Lavatory Sinks				2	-	-	
ECO4 TOTAL.		NO.		DIM		7	c
2	KITCHEN SINK		NO RETROFIT	9.5	365	_	0
Misc. Sinks							
ECO2 TOTAL:		LPF		LPF	#FL/YR	-	0
3	TANK TYPE	19	1.6 GPF TANK TYPE TOILET	6.1	14600	-	
Water Closets							
ECO3 TOTAL .		I DE		10	#FI /VR	-	0
4		i					
Urinals							
ECOA TOTAL .		P DW		MO	HPS/VP	c	C
1014 101AL.							2
5 Shower Heads	KESIDENIIAL IYPE	9.5	NO KEIKOFII	G.9	245	-	855222
ECO5 TOTAL:		TEMP		TEMP		-	222558
9	40 GAL AMER. APP. #T-340						
Water	CAPACITY: 30,000 BTU/H	334	REDUCE STORAGE TEMP	322	8760	-	
Heater (GAS)	RECOVERY: 7.7 GAL/H		INSTALL INSUL JACKET	322	8760	-	
					-		
ECO6 TOTAL:						1	0

### **SYSTEMS CORP**

	FY94S EEAP FT. KNOX	FT. KNC	-	ER CON	WATER CONS RVATION STUDY	TUDY	2 OF 2
		C)		ION WO	CALCULATION WORK SHEET 2		
FACILITY NO.:	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
	Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
ECO Number	Annual Water	Annual	Energy	Saving	WATER	Total	Total
ECO Type	Saving LPY	ELEC	HMX ELEC	GAS MWH	Dollar Saving	Dollar Saving	Dollars Invested
-	0			0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
7	0			0	\$0.00	\$0.00	\$0.00
Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
က	188,340				\$78.16	\$78.16	\$418.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$418.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	00.0\$	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
9	222,558			385	\$92.36	\$4,136.66	\$0.00
Shower Heads	0			0	\$0.00	00.0\$	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	222,558	0	0	385	\$92.36	\$4,136.66	\$0.00
9	EST ANNUAL						
Water	HOT WTR			0.89		\$9.37	
Heater	CONSUMPTION			7.70		\$80.96	\$60.00
(GAS)	(LITERS)						
	43,946						
ECO6 TOTAL:	43,946	0	0	6	\$0.00	\$90.33	\$60.00
SYSTEMS CORP	ORP			Systems	Engineering and	Systems Engineering and Management Corporation,	poration, Knoxville, TN

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT	KNOX WAT	CONSERVATION STUDY	N STUD	<b>\</b>	10
	CAL	ULATION WORK S	1		DATE	5 OCT 94
FACILITY NO.:	7751 C	FU	FUNCTION:	UNAC	UNACCOM PERS	PERS HOUS DET FAC
Occupancy:	FAMILY	Operatin	Operating Hours:	24	AL OF 234	
ECO Number	Existing Fixture System		ure System	<u> </u>		
ECO Type	اءا	LPM		Ī	YR Quantity	y Eliminated LPY
	SINK W/ AERATOR	9.5 NO RETROFIT	0	9.5 125	1	
Lavatory Sinks						
FCO4 TOTAL		Nd.		Md	30 A	0
2	KITCHEN SINK	95 NO RETROFIT	0.	9.5 365	-	0
Misc. Sinks						
ECO2 TOTAL:		ТРЕ		LPF #FL/YR	YR 1	0
8	TANK TYPE	19 16 GPF TANK TYPF	TOII FT	6.1 14600	00	
Water Closets						
FCO3 TOTAL		I DF		LPF #FL/YR	YR 1	0
4				1_		
Urinals						
ECO4 TOTAL:		LPM		LPM HRS/YR	/YR 0	0
5	RESIDENTIAL TYPE	9.5 NO RETROFIT		<del>!</del> —	5	0
Shower Heads	1					
ECO5 TOTAL:		TEMP	1	TEMP	1	0
9	40 GAL AMER. APP. #T-340					
Water	CAPACITY: 30,000 BTU/H				1 1	
Heater	RECOVERY: 7.7 GAL/H	INSTALL INSUL JAC	JACKET 3	322 8760	1	
(GA3)						
ECO6 TOTAL:				7		0
SYSTEMS CORP	CORP	Systems Engineering and Management Corporation,	d Manageme	nt Corpor		Knoxville, TN
3 -42						

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT. KNOX	T. KNO		ER CON	WATER CON! RVATION STUDY	TUDY	2 OF 2
		CAL		ION NOI	CULATION WORK SHEET 2		
FACILITY NO.:	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
) - - -	Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
ECO Number	Annual Water	Annual	Energy	Saving	WATER	Total	Total
ECO Type	Saving LPY	ELEC		GAS MWH	Dollar Saving	Dollar Saving	Dollars Invested
1	0			0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
The state of the s	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
3	188,340				\$78.16	\$78.16	\$418.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$418.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
9	EST ANNUAL						
Water	HOT WTR			0.89		\$9.37	
Heater	CONSUMPTION			7.70		\$80.96	\$60.00
(GAS)	(LITERS)						
	43,946						
ECO6 TOTAL:	43,946	0	0	6	\$0.00	\$90.33	\$60.00
	בבכ						

SYSTEMS CORP

FUNCTION:		FY94S EEAP FT	T. KNC	. KNOX WAT CONSERVATION STUDY	ION S	TUDY		1 G
PACILITY NO. : 7821B   FUNCTION: TYPICAL OF 82 UN Occupancy: Existing Fixture System   Pacing Fixtures System   Pacing Fixtures System   Pacing Fixtures		CAL	CULAT	ION WORK SHEET 1			DATE:	5 OCT 94
Proceeding the control of the cont	FACILITY NO. :	7821 B		FUNCTION:	, ,	UNACCON	A PERS	HOUS DET FAC
ECO Number         Existing Fixture System         Retrofited Fixture System         Usage Intrustual Description         Usage Intrustual Descript	Occupancy:	FAMILY		Operating Hours:	1	I YPICAL (	JF 82 UE	
ECO Type         Description         LPM         Description         LPM         HRS/R Quantity           Lavatory Sinks         SINK W/ AERATOR         9.5 NO RETROFIT         1.PM	ECO Number	Existing Fixture System	_	Retrofited Fixture Syster	E	Usage	Fixtures	Water Leaks
SINK W/ AERATOR   9.5   NO RETROFIT   9.5   125   12	ECO Type	Description		Description		HRS/YR	Quantity	Eliminated LPY
Lavatory Sinks	-	SINK W/ AERATOR		NO RETROFIT	9.5	125	_	
ECOT TOTAL:	Lavatory Sinks							
Misc. Sinks   9.5   NO RETROFIT   9.5   365   1	FCO1 TOTAL		MO		MO		4	
Misc. Sinks	2	KITCHEN SINK	-	NO PETROFIT	0 5	365	- -	
CCO2 TOTAL:   3	Misc. Sinks				0.9	500	-	P
3         TANK TYPE         19         1.6 GPF TANK TYPE TOILET         6.1         14600         1           ECO3 TOTAL:         4         LPF	ECO2 TOTAL:		LPF		LPF	#FL/YR	1	0
Water Closets	~	TANK TVDE	1-	1 & CDE TANK TVDE TON ET	7 9	11600	-	
ECO3 TOTAL:         LPF         #FL/YR         1           4         Urinals         4         1 <td>Water Closets</td> <td></td> <td></td> <td>LOGITIMA ITE IOLEI</td> <td>-</td> <td>14000</td> <td>-</td> <td></td>	Water Closets			LOGITIMA ITE IOLEI	-	14000	-	
4         4         4         7         4         7         4         7         4         8         9			LPF		LPF	#FL/YR	-	0
Urinals         LPM         LPM         HRS/YR         0           5         RESIDENTIAL TYPE         11.4 NO RETROFIT         LPM         HRS/YR         0           Shower Heads         TEMP         11.4 245         1           ECO5 TOTAL:         TEMP         1         1           ECO5 TOTAL:         TEMP         1         1           Water         CAPACITY: ?         336         REDUCE STORAGE TEMP         322         8760         1           Heater         RECOVERY: ?         INSTALL INSUL JACKET         322         8760         1           ECO6 TOTAL:         CAPACITY: ?         INSTALL INSUL JACKET         322         8760         1           ECO6 TOTAL:         Systems Engineering and Management Corporation, Knoxville, TN	4							
ECO4 TOTAL:         LPM         LPM         LPM         HRS/YR:         0           5         RESIDENTIAL TYPE         11.4 NO RETROFIT         11.4 245         1           Shower Heads         TEMP         11.4 245         1           ECO5 TOTAL:         TEMP         1         1           Water         CAPACITY: ?         336 REDUCE STORAGE TEMP         322 8760         1           Heater         RECOVERY: ?         INSTALL INSUL JACKET         322 8760         1           (GAS)         CAS         1         1           ECO6 TOTAL:         Systems Engineering and Management Corporation, Knoxville, TN	Urinals							
5 RESIDENTIAL TYPE         11.4 NO RETROFIT         11.4 245         1           Shower Heads         RECO5 TOTAL:         TEMP         1           ECO5 TOTAL:         TEMP         1           6 A0 GAL RHEEM/FURY         336 REDUCE STORAGE TEMP         322 8760         1           Heater         RECOVERY: ?         INSTALL INSUL JACKET         322 8760         1           (GAS)         ECO6 TOTAL:         1         1           ECO6 TOTAL:         Systems Engineering and Management Corporation, Knoxville, TN	ECO4 TOTAL:		LPM		LPM	HRS/YR	0	0
Shower Heads         TEMP         TEMP         1           ECO5 TOTAL:         40 GAL RHEEM/FURY         1         1           Water         CAPACITY: ?         336         REDUCE STORAGE TEMP         322         8760         1           Heater         RECOVERY: ?         INSTALL INSUL JACKET         322         8760         1           (GAS)         ECO6 TOTAL:         1         1         1    Systems Engineering and Management Corporation, Knoxville, TN	2	ľ	1	NO RETROFIT	11.4	245	-	0
ECOS TOTAL:         TEMP         TEMP         1           6         40 GAL RHEEM/FURY         336         REDUCE STORAGE TEMP         322         8760         1           Water         CAPACITY: ?         INSTALL INSUL JACKET         322         8760         1           (GAS)         ECOG TOTAL:         ECOG TOTAL:         1         1           SYSTEMS CORP         Systems Engineering and Management Corporation, Knoxville, TN	Shower Heads							
6 40 GAL RHEEM/FURY Water CAPACITY: ? 336 REDUCE STORAGE TEMP 322 8760 1 Heater RECOVERY: ? INSTALL INSUL JACKET 322 8760 1 (GAS) ECO6 TOTAL:  Systems Engineering and Management Corporation, Knoxville, TN	ECO5 TOTAL:		TEMP		TEMP		-	0
Water     CAPACITY: ?     336     REDUCE STORAGE TEMP     322     8760     1       Heater     RECOVERY: ?     INSTALL INSUL JACKET     322     8760     1       (GAS)     ECO6 TOTAL:     1       ECO6 TOTAL:     Systems Engineering and Management Corporation, Knoxville, TN	9	40 GAL RHEEM/FURY						
Heater     RECOVERY: ?     INSTALL INSUL JACKET     322     8760     1       (GAS)     ECO6 TOTAL:     A Systems Engineering and Management Corporation, Knoxville, TN		CAPACITY: ?		REDUCE STORAGE TEMP	322	8760	-	
ECO6 TOTAL:  Systems Engineering and Management Corporation, Knoxville, TN		RECOVERY: ?		INSTALL INSUL JACKET	322	8760	-	
SYSTEMS CORP  Systems Engineering and Management Corporation, Knoxville, TN								
SYSTEMS CORP Systems Engineering and Management Corporation,	ECO6 TOTAL:						1	0
SYSTEMS CORP Systems Engineering and Management Corporation,								
		CORP	Systen	ns Engineering and Manager	nent C	orporation		ille, TN
	2							

Systems Engineering and Management Corporation, Knoxville, TN

		FY94S EEAP FT. KNOX WATER CON	T. KNO	X WATE	RCON	<b>RVATION STUDY</b>	TUDY	2 OF 2
			CA	LCULATI	ON WO			
	FACILITY NO.:	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
	1	Gas Rate:	10.51	#WW/\$		Demand Rate:		\$/KW
	ECO Number	Annual Water	Annual Energy		Saving	WATER	Total	Total
	ECO Tyne	Saving	ELEC		GAS	Dollar Saving	Dollar Saving	Dollars Invested
	1	ŀ			0	\$0.00	\$0.00	\$0.00
	Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
		0			0	\$0.00	\$0.00	\$0.00
	ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
	2	0			0	\$0.00	\$0.00	\$0.00
	Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
		0			0	\$0.00	\$0.00	\$0.00
	ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
	က	188,340				\$78.16	\$78.16	\$418.80
	Water Closets	0				\$0.00	\$0.00	\$0.00
		0				\$0.00	\$0.00	\$0.00
	ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$418.80
	4	0				\$0.00	\$0.00	\$0.00
	Urinals	0				\$0.00	\$0.00	\$0.00
		0				\$0.00	\$0.00	\$0.00
	ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
	2	0			0	\$0.00	\$0.00	\$0.00
	Shower Heads	0			0	\$0.00	\$0.00	\$0.00
		0			0	\$0.00	\$0.00	\$0.00
	ECO5 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
	9	EST ANNUAL						
	Water	HOT WTR			1.10		\$11.61	
	Heater	CONSUMPTION			7.70		\$80.96	\$60.00
	(GAS)	(LITERS) 43 946						
		0.00	ļ	•		000	17 000	00 004
	ECO6 IOIAL:	43,946	0	0	6	\$0.00	\$92.57	\$60.00
Page 3	SYSTEMS CORP	ORP			Systems	Engineering and	Management Cor	Systems Engineering and Management Corporation, Knoxville, TN
-45								

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT	T. XN	KNOX WAT CONSERVATION STUDY	S NOI	TUDY		10
	CALC	CULA	노			DATE:	5 OCT 94
FACILITY NO. :	7869 A		FUNCTION:	,	UNACCON	A PERS	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:	'	24 24	P	0
ECO Number	Existing Fixture System	1	Retrofited Fixture System	u.	Usage	Fixtures	Water Leaks
ECO Type	Description	MdT	Description	ПРМ	HRS/YR	Quantity	Eliminated LPY
1	SINK W/ AERATOR	9.6	NO RETROFIT	9.5	125	1	
Lavatory Sinks	SINK W/O AERATOR	22.7	INSTALL AERATOR	9.5	125	-	
ECO1 TOTAL		<b>№</b>		PM-		6	c
2	KITCHEN SINK	9 5	NO RETROFIT	9.5	365	-	0
Misc. Sinks				)			
		1		ı.	יובו פאט	,	
ECO2 IOIAL:		<u>-</u>		구	#FLJYK	-	0
Water Closets	TANK TYPE	19	1.6 GPF TANK TYPE TOILET	6.1	7300	2	
ECO3 TOTAL:		LPF		LPF	#FL/YR	2	0
4							
Urinals							
ECO4 TOTAL:		LPM		LPM	HRS/YR	0	0
5	RESIDENTIAL TYPE	9.5	NO RETROFIT	9.5	245	-	0
Shower Heads							
ECO5 TOTAL:		TEMP		TEMP		1	0
9	40 GAL RHEEM						
Water	CAPACITY: 30,000 BTU/H	332	REDUCE STORAGE TEMP	322	8760	_	
Heater	RECOVERY: ?		INSTALL INSUL JACKET	322	8760	-	
(GAS)							
ECO6 TOTAL:						1	0

Systems Engineering and Management Corporation, Knoxville, TN

CALCULATION WORK SHEET 2   Water Rate:	Mater Rate: 0.42		FY94S EEAP FT. KNOX	T. KNO		WATER CON	RVATION STUDY	TUDY	2 OF 2
Mater Rate:	Water Rate: 0.42 \$/KL			Ď	LCULAT	OM NO!	RK SHEET 2		
Gas Rate:         10.51         \$\text{MWMH}\$         Demand Rate:         \$\text{SWM}\$           Problem Saving LPY         Annual Water KWH         Annual Mater KWH         Annual Mater RelEEC         GAS GAS         \$\text{GOO}\$         \$\text{GOO}\$         \$\text{SOO}\$         \$\text{SOO}\$	lai Water Annual Energy S  Lai Water Annual Energy S  By 2000  Co	FACILITY NO.:	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
sr         Annual Water         Annual ELEC         GAS         WATER         Total           Saving         LPY         KWH         MWH         Dollar Saving         Dollar Saving           ks         99,000         0         0         50.00         \$0.00           s         0         0         0         \$0.00         \$0.00           s         0         0         \$0.00         \$0.00         \$0.00         \$0.00           s         0         0         \$0.00         \$0.00         \$0.00         \$0.00           s         0         0         \$0.00         \$0.00         \$0.00         \$0.00           s         0         0<	ng         LPY         KW         KWH           0         0         0           9,000         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           0         0         0           ANNUAL         0         0           0 T WTR         0         0           3,946         0         0           3,946         0         0		Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
ks         Saving LPY FWW FWH PWH PWH POllar Saving 0         CAS         Dollar Saving Suit O         CAS         Dollar Saving Suit O         Dollar Saving Suit O         CAS         Dollar Saving Suit O         CAS         CAS <td>ng LPY KW KWH  0 9,000 0 9,000 0 0 0 0 0 0 0 0 0 0 0</td> <td>ECO Number</td> <td>Annual Water</td> <td>Annual</td> <td>Energy</td> <td>Saving</td> <td>WATER</td> <td>Total</td> <td>Total</td>	ng LPY KW KWH  0 9,000 0 9,000 0 0 0 0 0 0 0 0 0 0 0	ECO Number	Annual Water	Annual	Energy	Saving	WATER	Total	Total
ks         99,000         0         171         \$41.09         \$1,840.10           s         99,000         0         171         \$41.09         \$1,840.10           s         0         0         \$0.00         \$0.00           s         0         0         \$0.00         \$0.00           s         0         0         \$0.00         \$0.00           ts         0         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00 <th< td=""><td>9,000 0 9,000 0 0 0 0 0 0 0 0 0 0 0 0</td><td></td><td></td><td></td><td></td><td>GAS</td><td>Scive Such</td><td>Saive O relloc</td><td>potocyal arelloo</td></th<>	9,000 0 9,000 0 0 0 0 0 0 0 0 0 0 0 0					GAS	Scive Such	Saive O relloc	potocyal arelloo
ks         99,000         171         \$41.09         \$1,840.10           99,000         0         0         \$0.00         \$0.00           s         0         0         \$0.00         \$0.00           s         0         0         \$0.00         \$0.00           s         0         0         \$0.00         \$0.00           ts         0         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00         \$0.00           ts	9,000 0 0 0 0 0 0 0 0 0 0 0 0	1				0	\$0.00	\$0.00	\$0.00
0         0         \$0.00         \$0.00           99,000         0         171         \$41.09         \$1,840.10           s         0         0         \$0.00         \$0.00           s         0         0         \$0.00         \$0.00           ts         0         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00         \$0.00           ts         0         \$0.00         \$0.00         \$0.00           ts         0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00         \$0.00           CONSUMPTION         7.70         \$0.00         \$0.00           (LITERS)         \$0.00         \$0.00         \$0.00           \$0.00         \$0.00 </td <td>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>Lavatory Sinks</td> <td>000'66</td> <td></td> <td></td> <td>171</td> <td>\$41.09</td> <td>\$1,840.10</td> <td>\$9.70</td>	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Lavatory Sinks	000'66			171	\$41.09	\$1,840.10	\$9.70
99,000         0         171         \$41.09         \$1,840.10           s         0         0         \$0.00         \$0.00           s         0         0         \$0.00         \$0.00           t         0         0         \$0.00         \$0.00           t         0         0         \$0.00         \$0.00           t         0         \$0.00         \$0.00         \$0.00           t	9,000 0 0 0 0 0 0 1,340 0 0 0 3,946 0 0		0			0	\$0.00	\$0.00	\$0.00
s         0         \$0.00         \$0.00           s         0         \$0.00         \$0.00           to         0         \$0.00         \$0.00           to         \$0.00         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           to         \$0.00         \$0.00         \$0.00           <	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ECO1 TOTAL:	000'66	0	0	171	\$41.09	\$1,840.10	\$9.70
s         0         \$0.00         \$0.00           c         0         \$0.00         \$0.00           to         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           to         \$0.00         \$0.00         \$0.00           to         <	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2	0			0	\$0.00	\$0.00	\$0.00
0         0         \$0.00         \$0.00           40         0         \$0.00         \$0.00           45         0         \$0.00         \$0.00           45         0         \$0.00         \$0.00           45         0         \$0.00         \$0.00           46         0         \$0.00         \$0.00           47         0         \$0.00         \$0.00           48         0         0         \$0.00         \$0.00           49         0         0         \$0.00         \$0.00           40         \$0.00         \$0.00         \$0.00           43,946         \$0.00         \$0.00         \$0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
ts         0         \$0.00         \$0.00           ts         0         \$78.16         \$78.16           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WIR         0.76         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96	0 0 0 0 0 0 0 88,340 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0			0	\$0.00	\$0.00	\$0.00
ts         188,340         \$78.16         \$78.16           ts         0         \$0.00         \$0.00           th         \$0.00         \$0.00         \$0.00           th         \$0.00         \$0.00         \$0.00           th         \$0.00         \$0.00         \$0.00           th         \$0         \$0.00         \$0.00           th         \$0         \$0.00         \$0.00           th         \$0.00         \$0.00         \$0.00 <td>38,340 0 0 0 0 0 0 0 0 0 0 0 0 0 XIMPTION ITERS) 3,946 0 0 0 3,946</td> <td>ECO2 TOTAL:</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>\$0.00</td> <td>\$0.00</td> <td>\$0.00</td>	38,340 0 0 0 0 0 0 0 0 0 0 0 0 0 XIMPTION ITERS) 3,946 0 0 0 3,946	ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
45         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           4s         0         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           EST ANNUAL         \$0.76         \$0.00         \$0.00           HOT WTR         0.76         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1	3	188,340				\$78.16	\$78.16	\$838.80
0         \$0.00         \$0.00           188,340         \$7.8.16         \$7.8.16           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           4s         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           eST ANNUAL         0.76         \$0.00         \$0.00           HOT WTR         0.76         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96           (LITERS)         \$80.96         \$80.96	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0	Water Closets	0				\$0.00	\$0.00	\$0.00
188,340         \$78.16         \$78.16           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           EST ANNUAL         0.76         \$0.00           HOT WTR         0.76         \$80.20           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96	18,340 0 0 0 0 0 0 0 0 0 ANNUAL SUMPTION ITERS) 3,946 0 0		0				\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00           HOT WIR         0.76         \$80.90           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946         \$80.96	0 0 0 0 0 0 0 ANNUAL 0 0 0 SUMPTION ITERS) 3,946 0 0	ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$838.80
o         \$0.00         \$0.00           o         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.76         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96	0 0 0 0 0 0 0 ANNUAL OT WTR SUMPTION TERS) 3,946 0 0	4	0				\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.00           0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.76         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96           43,946         83.946	0 0 0 0 0 0 ANNUAL TWTR SUMPTION ITERS) 3,946 0 0	Urinals	0				\$0.00	\$0.00	\$0.00
ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           d         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.76         \$8.02           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96           43,946         43,946         80.00	0 0 0 0 0 ANNUAL 5T WTR SUMPTION 17ERS) 3,946 0 0		0				\$0.00	\$0.00	\$0.00
ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           0         0         \$0.00         \$0.00           EST ANNUAL         0.76         \$0.00         \$0.00           HOT WTR         0.76         \$80.96           CONSUMPTION         7.70         \$80.96           43,946         43,946         80.00	0 0 0 0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0	ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
ds         0         \$0.00         \$0.00           0         0         \$0.00         \$0.00           EST ANNUAL         0.76         \$0.00         \$0.00           HOT WTR         0.76         \$80.96           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946	0 0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0	5	0			0	\$0.00	\$0.00	\$0.00
0         0         \$0.00         \$0.00           0         0         \$0.00         \$0.00           EST ANNUAL         0.76         \$8.02           HOT WTR         7.70         \$80.96           (LITERS)         7.70         \$80.96           43,946         83.946	0 0 0 ANNUAL 0T WTR SUMPTION 3,946 0 0	Shower Heads	0			0	\$0.00	\$0.00	\$0.00
0         0         \$0.00         \$0.00           EST ANNUAL         0.76         \$8.02           HOT WTR         7.70         \$80.96           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946	0 0 0 ANNUAL OT WTR SUMPTION ITERS) 3,946 0 0		0			0	\$0.00	\$0.00	\$0.00
EST ANNUAL       0.76       \$8.02         HOT WTR       0.76       \$80.96         CONSUMPTION       7.70       \$80.96         (LITERS)       43,946	ANNUAL  T WTR  SUMPTION  TERS)  3,946  0  0	ECO5 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
HOI WIR 0.76 \$8.02 CONSUMPTION 7.70 \$80.96 (LITERS) \$80.96	3,946 0 0	9	EST ANNUAL						
CONSUMPTION	3,946 0 0	Water	HOI WIK			0.76		\$8.02	\$16.80
(LITERS) 43,946	3,946 0 0	Heater	CONSUMPTION			7.70		\$80.96	\$60.00
45,440	3,946 0 0	(GAS)	(LITERS)						
	3,946 0 0		43,340						
		SYSTEMS C	ORP			Systems	s Engineering and	i Management Cor	poration, Knoxville, Th

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S FEAP FT	\ KN	KNOX WAT CONSERVATION STILLY	S NOI	TIIDY		10
	CAL	CULAT	X			DATE:	5 OCT 94
FACILITY NO.:	9053 B	1	FUNCTION:	,	UNACCON	A PERS	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY	1	Operating Hours:	•	24	JF 32/ L	o I
ECO Number	Existing Fixture System Description	NG -	Retrofited Fixture System	E I	Usage HR /</th <th>Fixtures Ougnities</th> <th>Water Leaks</th>	Fixtures Ougnities	Water Leaks
1 Lavatory Sinks	SINK W/ AERATOR	9.5	NO RETROFIT	9.5		2	
ECO1 TOTAL:		<u>Б</u>		Md	# A	6	O
2 Misc. Sinks	KITCHEN SINK	9.5	NO RETROFIT	9.5	365	-	0
ECO2 TOTAL:	TANIV TVDE	LPF	1 & CDE TANIV TADE TOIL ET	LPF	#FLYR	1	0
Water Closets		2	LOGET LAWA LIFE LOILEL	- 0	0067	7	
- 4 T O T & O O T		-		1			
ECOS 101AL:		7		귀	#FLYR	7	0
4 Urinals							
ECO4 TOTAL:		LPM		LPM	HRS/YR	0	0
5 Shower Heads	RESIDENTIAL TYPE	9.5	NO RETROFIT	9.5	245	_	55640
ECOS TOTAL		TEMP		TEMP		-	55640
9	40 GAL RUUD #P40-7					-	2000
Water Heater	CAPACITY: ? RECOVERY: ?	345	REDUCE STORAGE TEMP INSTALL INSUL JACKET	322	8760 8760		
(GAS)							
ECO6 TOTAL:						7	0

Systems Engineering and Management Corporation, Knoxville, TN

**SYSTEMS CORP** 

	FY94S EEAP FT. KNOX	T. KNO	X WATI	WATER CON	<b>RVATION STUDY</b>	TUDY	2 OF 2
		CAL		ION WOF	X		
FACILITY NO.:	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
	Gas Rate:	10.51	\$/MWH		Demand Rate:		%/KW
ECO Number	Annual Water	Annual		Saving	WATER	Total	Total
ECO Type	Saving LPY	ELEC	ELEC KWH	GAS MWH	Dollar Saving	Dollar Saving	Dollars Invested
7	0			0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
3	188,340				\$78.16	\$78.16	\$838.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$838.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
2	55,640			96	\$23.09	\$1,034.18	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	55,640	0	0	96	\$23.09	\$1,034.18	\$0.00
9	EST ANNUAL						
Water	HOT WTR			1.75		\$18.35	
Heater	CONSUMPTION			7.70		\$80.96	\$60.00
(GAS)	(LITERS)						
	43,946						
ECO6 TOTAL:	43,946	0	0	6	\$0.00	\$99.31	\$60.00
CVCTERIC	2000			,			

**SYSTEMS CORP** 

	FY94S EEAP FT	1 .	KNOX WAT CONSERVATION STUDY	S NOI	TUDY		10
	CALCI	ULAT	ULATION WORK SHEET 1			DATE:	5 OCT 94
FACILITY NO.:	9141 A&B		FUNCTION:	1	UNACCON	A PERS OF 87 UN	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:	'	24		
ECO Number	Existing Fixture System		Retrofited Fixture System		Usage	Fixtures	Water Leaks
ECO Type	Description	LPM	Description	LPM	HRS/YR	Quantity	Eliminated LPY
1			NO RETROFIT	9.5	125	1	
Lavatory Sinks	SINK W/O AERATOR	22.7	INSTALL AERATOR	9.5	125		
ECO1 TOTAL:		LPM		LPM		2	0
2	KITCHEN SINK	9.5	NO RETROFIT	9.5	365	-	0
Misc. Sinks							
ECO2 TOTAL:		LPF		LPF	#FL/YR	1	0
3	TANK TYPE	1	1 6 GPF TANK TYPF TOILET	6.1	14600	-	
Water Closets	_			5		-	
FCO3 TOTAL .		<u> </u>		100	#FI WB	-	
4				j		-	
Urinals							
ECO4 TOTAL:		LPM		FPM	HRS/YR	0	0
2	RESIDENTIAL TYPE	9.5	NO RETROFIT	9.5	245	1	0
Shower Heads							
FCO5 TOTAL		TEMP		TEMP		-	C
9	40 GAI RHFFM/FIIRY						
Water	CAPACITY: ?	328	REDUCE STORAGE TEMP	322	8760	-	
Heater	RECOVERY: ?		INSTALL INSUL JACKET	322	8760	-	
(GAS)							
- I & FOT OCCI							
ECOP IOIAL:							0

## SYSTEMS CORP

	FY94S EEAP FT. KNOX	T. KNO		WATER CON	RVATION STUDY	TUDY	2 OF 2
		CAL		OM NOI	CULATION WORK SHEET 2		
FACILITY NO.:	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
5	Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
ECO Number	Annual Water	Annual	Energy 6	Saving	WATER	Total	Total
ECO Type	Saving LPY	ELEC KW		GAS MWH	Dollar Saving	Dollar Saving	Dollars Invested
1				0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	000'66			2	\$0.41	\$18.40	\$9.70
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	000'66	0	0	2	\$0.41	\$18.40	\$9.70
2	0			0	\$0.00	\$0.00	\$0.00
Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
3	188,340				\$78.16	\$78.16	\$418.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$418.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				00'0\$	\$0.00	\$0.00
5	0			0	00.0\$	\$0.00	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
9	EST ANNUAL						
Water	HOT WTR			0.46		\$4.88	\$16.80
Heater	CONSUMPTION			7.70		\$80.96	\$60.00
(GAS)	(LITERS)						
	43,946						
ECO6 TOTAL:	43,946	0	0	8	\$0.00	\$85.84	\$76.80
CVCTEMS CODD	990						

### 4 ECIP PROJECT 2

T 2
FY94S WATER CONSERVATION STUDY (WATER AND ENERGY), FT. KNOX, KY

This section contains the project description and the DD1391 forms for ECIP Project FH-2, Family Housing Water Conservation Phase II improvements to 1,602 Family Housing Units. Two lists of the buildings included in the project follow the DD1391 forms. The first list includes all buildings considered in the project in numerical order. The second list shows which buildings were used to model unsurveyed buildings. Following these lists are the LCCID report and the cost estimate for the proposed project. Calculation sheets for the individual buildings follow the project cost estimate. Below is a detailed index of the information included in this section.

D1391 Form
ble 4.1 - ECIP FH-2 - Family Housing 4-
able 4.2 - Buildings Modeled by Surveyed Buildings
oject LCCID Report
atalog Cut Sheets/Product Information
oject Cost Estimate
pilding Calculation Sheets

DATE:

22 December 1994

PROJECT NO.:

ECIP-FH2

PROJECT TITLE:

Family Housing Water Conservation Phase II

INSTALLATION:

Fort Knox

LOCATION:

Kentucky

### PRIMARY FACILITY

\$993,000

\$820,000
82,000
902,000
45,100
45,100
992,200
\$993,000

Replace water closets in 1602 family housing units with water saving, 6 liters (1.6 gallons) per flush water closets. All water closets will be of the flush tank type. The project will significantly reduce potable water consumption and sanitary waste production.

DATE:

22 December 1994

PROJECT NO.:

ECIP-FH2

PROJECT TITLE:

Family Housing Water Conservation Phase II

INSTALLATION:

Fort Knox

LOCATION:

Kentucky

### PROJECT:

Replace water closets in 1602 family housing units with water saving, 6 liters (1.6 gallons) per flush water closets.

### **REQUIREMENTS:**

Fort Knox utilizes inefficient outdated water closets in its family housing units. The existing water closets consume significantly more water and generate greater quantities of sanitary waste per flush than the new standard water saving water closet. The existing inefficient systems place greater demand on the water table, water treatment plant and waste treatment plant. The U.S. Army Corp of Engineers, Louisville District, contracted an Energy Engineering Analysis Program (EEAP) Water Conservation Study of the Post. The study identified energy and water conservation opportunities. Life cycle cost analysis was performed on each opportunity to determine its discounted savings-to-investment ratio (SIR) and estimated payback period. This project has a SIR of 2.61 and a simple payback period of 5.68 years. The project exceeds the minimum requirements of an SIR greater than 1.25 and a simple payback of less than 10 years.

### **CURRENT SITUATION:**

The family housing units at Ft. Knox have inefficient water closets. The family housing units consume more water and generate more sanitary waste than is necessary. The new water closets will greatly reduce the water consumption and waste generated.

### IMPACT IF NOT PROVIDED:

If this project is not implemented, 1602 family housing units will continue to consume more water and generate more waste than necessary. The U.S. Army will fail to realize an estimated \$175K in annual savings (FY95\$) and a total discounted savings of \$2.59M during the twenty year life of the project.

### ADDITIONAL:

A life cycle cost analysis was performed on the project. The project will realize water savings of over 2.6 times the initial investment cost and will pay for itself in less than 5.7 years.

Ft. Knox is not on the list of installations considered for closure or realignment.

DATE:

22 December 1994

PROJECT NO.:

ECIP-FH2

PROJECT TITLE:

Family Housing Water Conservation Phase II

INSTALLATION:

Fort Knox

LOCATION:

Kentucky

SECTION 11 - ECONOMIC ANALYSIS DATA

11D ECONOMIC JUSTIFICATION SUMMARY

This water conservation project is recommended for funding. A life cycle cost analysis was performed on each portion of this project and on the overall project. The overall project will realize water savings of over 2.6 times the initial investment cost and will pay for itself in less than 5.7 years.

TABLE 4.1 ECIP FH-2 - FAMILY HOUSING

<u></u>		1 1000 1 5	: 5000 A II 5070 A II
4402 A-D	4518 A-H	4888 A-D	5300 A-H - 5370 A-H
4404 A-L	4521 A-E	4889 A-F	5310 A-H
4408 A-D	4801 A-D	4891 A-F	5311 A-H
4410 A-C, E-F	4802 A-F	4894 A-F	5314 A-C, E-H
4413 A-D	4804 A-C	4897 A-D	5315 A-H - 5317 A-H
4414 A-F	4806 A-D	4898 A-D	5320 A-H - 5330 A-H
4417 A-D	4807 A-D	4899 A-F	5334 A-H
4418 A-L	4808 A-F	4902 A-D	5336 A-H
4422 A-D	4810 A-F	4903 A-D	5337 A-H
4423 A-L	4811 A-D	4904 A-F	5339 A-H
4427 A-L	4813 A-D	4907 A-D	5340 A-H
4431 A-F	4814 A-D	4908 A-L	5342 A-H
4434 A-F	4816 A-D	4913 A-D	5344 A-H
4437 A-F	4818 A-D	4914 A-H	5346 A-H - 5349 A-H
4439 A-L	4820 A-D	4916 A-F	5351 A-H - 5353 A-E
4443 A-D	4822 A-D	4917 A-D	5353
4444 A-D	4822 A-D	4918 A, C-L	5353 G-H - 5358 A-H
4446 A-L	4823 A-D	4921 A-L	5364 A-H - 5368 A-H
4450 A-C, E-L	4824 A-H	4925 A-D	5370 A-H
4454 A-D	4827 A-F	4926 A-L	5400 A-H
4455 A-D	4829 A-L	4930 A-D	5406 A-D
4456	4833 A-L	4931 A-F	5406 F-H - 5409 A-H
4456 A-L	4837 A-D	4934 A-E	5411 A-H - 5413 A-H
4460 A-L	4838 A-L	4936 A-L	5415 A-H
4464 A-D	4842 A, C-F	4940 A-F	5417 A-H
4465 A-D	4844 A-L	4942 A-L	5419 A-H - 5422 A-H
4466 A-E	4848 A-F	4946 A-D	5425 A-H
4468 A-D	4850 A-L	4947 A-F	5427 A-H
4469 A-D	4854 A-D	4950 A-D	5430 A-H
4471 A-D - 4473 A-D	4855 A-D	4951 A-L	5432 A-H - 5436 A-H
4474 A-D	4856 A-F	4955 A-D	5438 A-H
4476 A-L	4859	4957 A-L	5441 A-H
4480 A-L	4859 B-D - 4861 A-D	4963 A-L	5442 A-H
4484 A-E	4862 A-F	4967 A-F	5444 A-H
4486 A-D	4865 A-H	4969 A-K	5446 A-H
4488 A-L	4868 A-F	4973 A-D	5447 A-H
4492 A-L	4870	4974 A-F	5449 A-H
4496	4870 A-L	49*76 A-D	5450 A-H
4496 B-D - 4498 A-D	4874 A-D	4977 A-F	5452 A-H
4499 A-L	4875 A-K	4979 A-F	5454 A-H
4503 A, C-D	4879 A-D	4981 A-F	5455 A-H
4504 A-L	4880 A-F	4984 A-D	5457 A-H - 5459 A-H
4508 A-L	4883 A-D	4985 A-DE	5461 A-H
4512 A-H	4884 A-F	4987 A-F	
4515 A-F	4887 A-D		
TJIJ A-I	1.00.112	<u></u>	<u>:</u>

TABLE 4.2 BUILDINGS MODELED BY SURVEYED BUILDINGS

BUILDINGS SURVEYED AND CALCULATED	BUILDINGS ASSUMED TYPICAL OF SURVEYED BUILDINGS
5353	5300A-H - 5307A-H, 5310A-H, 5311A-H, 5314A-C & E-H, 5315A-H - 5317A-H, 5320A-H - 5330A-H, 5334A-H, 5336A-H, 5337A-H, 539A-H, 5340A-H, 5342A-H, 5344A-H, 5346A-H - 5349A-H, 5351A-H - 5353A-E, 5353G-H - 5358A-H, 5364A-H - 5368A-H, 5370A-H, 5400A-H - 5406A-D, 5406F-H - 5409A-H, 5411A-H - 5413A-H, 5415A-H, 5417A-H, 5419A-H - 5422A-H, 5425A-H, 5427A-H, 5430A-H, 5432A-H, 5446A-H, 5447A-H, 5449A-H, 5450A-H, 5452A-H, 5454A-H, 5455A-H, 5457A-H - 5459A-H, 5461A-H
4456	4402A-D, 4404A-L, 4408A-D, 4410A-C & E-F, 4414A-F, 4418A-L, 4423A-L, 4427A-F, 4431A-F, 4434A-F, 4437A-F, 4439A-L, 4444A-D,4446A-L, 4450A-C & E-L, 4456A-L, 4460A-L, 44666A-E, 4469A-D, 4474A-D, 4476A-L, 4480A-L, 4484A-E, 4486A-D, 4488A-L, 4492A-L, 4499A-L, 4504A-L, 4508A-L, 4512A-H, 4515A-F, 4518A-H, 4521A-E
4496	4413A-D, 4417A-D, 4422A-D, 4443A-D, 4454A-D, 4455A-D, 4464A-D, 4465A-D, 4468A-D, 4471A-D - 4473A-D, 4496B-D - 4498A-D, 4503A & C-D
4859	4801A-D, 4806A-D, 4807A-D, 4811A-D, 4813A-D, 4822A-D, 4822A-D, 4823A-D, 4837A-D, 4854A-D, 4855A-D, 4859B-D - 4861A-D, 4879A-D, 4883A-D, 4887A-D, 4888A-D, 4897A-D, 4898A-D, 4902A-D, 4903A-D, 4907A-D, 4913A-D, 4917A-D, 4925A-D, 4930A-D, 4946A-D, 4950A-D, 4973A-D, 4976A-D, 4984A-D
4870	4802A-F, 4804A-C, 4808A-F, 4810A-F, 4814A-D, 4816A-D, 4818A-D, 4820A-D, 4824A-H, 4827A-F, 4829A-L, 4833A-L, 4838A-L, 4824A &C-F, 4844A-L, 4848A-F, 4850A-L, 4856A-F, 4826A-F, 4865A-H, 4868A-F, 4870A-L, 4874A-D, 4875A-K, 4880A-F, 4884A-F, 4889A-F, 4891A-F, 4894A-F, 4899A-F, 4904A-F, 4908A-L, 4914A-H, 4918A & C-L, 4921A-L, 4926A-L, 4931A-F, 4934A-E, 4936A-L, 4940A-F, 4942A-L, 4947A-F, 4951A-L, 4955A-D, 4957A-L, 4961A-F, 4963A-L, 4967A-F, 4969A-K, 4974A-F, 4977A-F, 4979A-F, 4981A-F, 4985A-D, 4987A-F

STUDY: ECIP-FH2 LCCID FY95 (92) LIFE CYCLE COST ANALYSIS SUMMARY ENERGY CONSERVATION INVESTMENT PROGRAM (ECIP) INSTALLATION & LOCATION: FT KNOX REGION NOS. 4 CENSUS: 3 PROJECT NO. & TITLE: ECIP-FH2 FAMILY HOUSING PROJECT 2 FISCAL YEAR 1995 DISCRETE PORTION NAME: WATER ANALYSIS DATE: 12-27-94 ECONOMIC LIFE 20 YEARS PREPARED BY: DERRINGTON 1. INVESTMENT A. CONSTRUCTION COST \$ 902000. B. SIOH 45100. C. DESIGN COST 45100. D. TOTAL COST (1A+1B+1C) \$ 992200. E. SALVAGE VALUE OF EXISTING EQUIPMENT \$ F. PUBLIC UTILITY COMPANY REBATE 992200. G. TOTAL INVESTMENT (1D - 1E - 1F) 2. ENERGY SAVINGS (+) / COST (-) DATE OF NISTIR 85-3273-X USED FOR DISCOUNT FACTORS OCT 1994 UNIT COST SAVINGS ANNUAL \$ DISCOUNT \$/MWH(1) MWH/YR(2) SAVINGS(3) FACTOR(4) DISCOUNTED FACTOR(4) SAVINGS(5) FUEL 15.08 A. ELECT \$ 46.40 0. 0. B. DIST \$ .00 C. RESID \$ .00 D. NAT G \$ 10.51 \$\$\$\$\$\$\$\$ Ο. 18.57 0. Ο. 0. 21.02 0. Ο. 0. 0. 18.58 Ο. 0. 16.83 E. COAL \$ .00 Ο. 17.38 .00 Ο. 0. F. PPG \$ M. DEMAND SAVINGS 0. 14.88 0. 0. N. TOTAL 3. NON ENERGY SAVINGS (+) / COST (-) 125000. A. ANNUAL RECURRING (+/-) (1) DISCOUNT FACTOR (TABLE A) 14.88 1860000. (2) DISCOUNTED SAVING/COST (3A X 3A1) B. NON RECURRING SAVINGS (+) / COSTS (-) SAVINGS(+) YR DISCNT DISCOUNTED ITEM COST(-) OC FACTR SAVINGS(+)/ COST(-)(4) (1) (2) (3) 10 734228. .74 1. REPLACEMENT \$ 992200. 734228. \$ 992200. d. TOTAL C. TOTAL NON ENERGY DISCOUNTED SAVINGS(+)/COST(-)(3A2+3Bd4)\$ 2594228. 4. FIRST YEAR DOLLAR SAVINGS 2N3+3A+(3Bd1/(YRS ECONOMIC LIFE))\$ 174610. 5. SIMPLE PAYBACK PERIOD (1G/4) 5.68 YEARS 6. TOTAL NET DISCOUNTED SAVINGS (2N5+3C) \$ 2594228. (SIR) = (6 / 1G) =2.61 7. SAVINGS TO INVESTMENT RATIO (IF < 1 PROJECT DOES NOT QUALIFY) \*\*\*\* Project does not qualify for ECIP funding; 4,5,6 for information only.

8. ADJUSTED INTERNAL RATE OF RETURN (AIRR):

N/A



- Water-saving 1.5 gallon flush.
- Features Pressure-Clean™
   flushometer tank system.
- Three-bolt quick connect system with factory-installed tank gasket and bolts.

K-3458 Wellworth Lite PC Toilet, vitreous china, 1.5 gallon flush. Close-coupled design with elongated bowl. Minimum roughing-in is 12" (305 mm).

Tank/bowl combination includes K-4333 bowl, K-4470 vitreous china tank with Kohler 81100 flushometer tank system, K-4471 tank cover and K-9434 chrome-plated trip lever.

IMPORTANT—For most satisfactory operation, a minimum static water pressure of 25 P.S.I. is required at the toilet supply inlet.

Recommended Seats and Supply K-4650 Lustra™ solid plastic seat with open front and cover.
K-4652 Lustra solid plastic seat with closed front and cover.

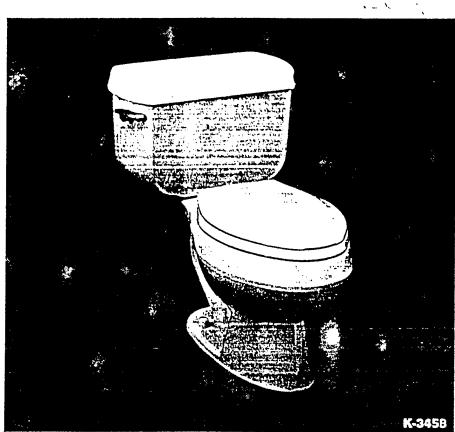
K-4670-C Lustra solid plastic seat (K-4681-C Black Black™) with open front and check hinge.

K-7637 %" angle supply with stop.

Tank Locks—Add suffix "-T" to product number.

Bedpan Lugs—Add suffix "-L" to product number.

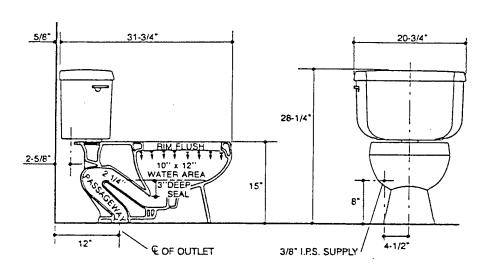
For complete color selection, see Colors section.



Wellworth Lite PC Toilet and Lustra seat (K-4652) in White.

U.S. Pat. Pending







	LIMITED FORT KNO	WATER CLO EEAP (WTR) X, KY	DSETS - FA Bid Date: Job #:	15-Dec-94 MILY HOUSING 94013.03 :Louisville,	KY	
Line #	Descript				======	========
TITIE #	Descript					
	Manhours	Matl	Labor	Equipment	Sub	Total
1521801100 Unit values	FLOOR MN	INSTALL N	ITE W/SEA	T. 1.6 GPF	2152 00	TANK TYPE, Ea.
Totals	8651.04	\$505,720	\$245,979	0.00	0.00 \$0	
U15 MECHANICAL	8652	\$505,720	\$245,979	\$0	\$0	\$751,699

			========			========
Line #	Descripti	ion				
	Manhours	Matl	Labor	Equipment	Sub	Total
	========			=======		
ESTIMATE TOTAL	8652	\$505,720	\$245,979	\$0	\$0	\$751,699
SALES TAX MATL MARKUP LABOR MARKUP	0.00% 0.00% 0.00%	\$0 \$0	\$0			
EQUIPT MARKUP SUB MARKUP	0.00%		ŲΨ	\$0	\$0	
TOTAL BEFORE CO CONTINGENCY BOND	ONTINGENC 10.00% 0.00%	\$505,720	\$245,979	\$0	\$0	\$751,699 \$75,170 \$0
PROFIT	10.00%					\$75,170
JOB TOTAL						\$902,039

Estimate: ECO - 3 Date: 15-Dec-94
Description: INSTALL WATER CLOSETS - FAMILY HOUSING
Project: LIMITED EEAP (WTR)Bid Date:
Location: FORT KNOX, KY Job #: 94013.03
Sq. footage: FAM HSG - GP 2 City indx:Louisville, KY

SUMMARY

٠.		-					
		Manhours	Matl	Labor	Equipment	Sub	Total
	=======================================	=======					
	U15 MECHANICAL	8652	\$505,720	\$245,979	\$0	\$0	\$751,699
	TOTAL	8652	\$505,720	\$245,979	\$0	\$0	\$751,699
	SALES TAX MATL MARKUP LABOR MARKUP EQUIPT MARKUP SUB MARKUP	0.00% 0.00% 0.00% 0.00% 0.00%	\$0 \$0	\$0	\$0	\$0	
		0.00% 0.00% 0.00% 10.00%	\$505,720	\$245,979	\$0	\$0	\$751,699 \$75,170 \$0 \$75,170
	JOB TOTAL						\$902,039

	FY94S EEAP FT	r. KN	. KNOX WA! R CONSERVATION STUDY	S NOI	TUDY		1 🕟 2
	CALC	SULAT	CALCULATION WORK SHEET 1			DATE:	5 OCT 94
FACILITY NO.:	4456 G		FUNCTION:	1*	UNACCOM PERS		HOUS DET FAC
Occupancy:	FAMILY (2BR)		Operating Hours:	'	24	J	0
ECO Number	Existing Fixture System		Retrofited Fixture System	ш	Usage	Fixtures	Water Leaks
ECO Type	Description	LPM	Description	LPM	~	Quantity	Eliminated LPY
-	SINK W/ AERATOR	9.5	NO RETROFIT	9.2	125	-	
Lavatory Sinks							
TOT FOOL		-		-	2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.		•
ECOT TOTAL:		ב ב		٦ 2			0
2	KITCHEN SINK	9.5	NO RETROFIT	9.5	365	-	0
Misc. Sinks							
ECO2 TOTAL:		LPF		LPF	#FL/YR	~	0
က	TANK TYPE	19	1.6 GPF TANK TYPE TOILET	6.1	14600	1	
Water Closets							
	The state of the s						
ECO3 TOTAL:		LPF		LPF	#FL/YR	1	0
4							
Urinals							
ECO4 TOTAL:		LPM		LPM	HRS/YR	0	0
5	RESIDENTIAL TYPE	9.5	NO RETROFIT	9.5	245	1	0
Shower Heads							
ECO5 TOTAL:		TEMP		TEMP		-	0
9	30 GAL A. O. SMITH						
Water	CAPACITY: ?	334	REDUCE STORAGE TEMP	322	8760	-	
Heater	RECOVERY: ?		INSTALL INSUL JACKET	322	8760	1	
(GAS)							
ECO6 TOTAL:				100 100 100 100 100 100 100 100 100 100		1	0

### PAGE 4-13

FACILITY NO.: W	Water Rate:	0, 0	1/1/+		L		- : - : - : +
	מוכו וומוכי	0.42	∜/KĽ		Energy Rate:		\$/KWH
	Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
ECO Number   A	Annual Water	Annual	Energy S	Saving	WATER	Total	Total
ECO Type S	Saving LPY	ELEC	ELEC	GAS	Dollar Saving	Dollar Saving	Dollars Invested
				0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
3	188,340				\$78.16	\$78.16	\$418.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$418.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
5	0			0	\$0.00	\$0.00	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
[AL:	0	0	0	0	\$0.00	\$0.00	\$0.00
	EST ANNUAL			0			
	HOI WIR			0.89		\$9.37	
	CONSUMPTION			7.70		\$80.96	\$60.00
(GAS)	(LITERS) 43.946						
COS TOTAL	42 046		,	6	000	60 004	000
ECOS IOIAE.	43,340			S C	\$0.00	\$30.33	\$60.00

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT	T. KN	. KNOX WA) R CONSERVATION STUDY	S NOI	TUDY		102
	CAL	CULAT	CALCULATION WORK SHEET 1			DATE:	5 OCT 94
FACILITY NO. :	4496		FUNCTION:	,.	JNACCON	M PERS	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY (3BR)		Operating Hours:	ı	24	24	0
ECO Number	Existing Fixture System		Retrofited Fixture System	E L	Usage	Fixtures	Water Leaks
ECO Type	Description	LPM	Description	LPM	HRS/YR	Quantity	Eliminated LPY
	SINK W/ AERATOR	9.5	NO RETROFIT	9.5	125	-	
Lavatory Sinks							
ECO1 TOTAL:		LPM		LPM		-	0
2	KITCHEN SINK	9.5	NO RETROFIT	9.5	365	-	0
Misc. Sinks							
ECO2 TOTAL:		LPF	1000 1000 1000 1000 1000 1000 1000 100	LPF	#FLYR	1	0
3	TANK TYPE	19	1.6 GPF TANK TYPE TOILET	6.1	14600	-	
Water Closets							
ECO3 TOTAL:	Walter Control of the	LPF	· · · · · · · · · · · · · · · · · · ·	LPF	#FL/YR	1	0
4							
Urinals							
ECO4 TOTAL:		LPM		LPM	HRS/YR	0	0
5	RESIDENTIAL TYPE	9.5	NO RETROFIT	9.5	245	1	0
Shower Heads							
ECO5 TOTAL:		TEMP	1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、1、	TEMP		-	0
9	30 GAL A. O. SMITH						
Water	CAPACITY: ?	334	REDUCE STORAGE TEMP	322	8760	-	
Heater	RECOVERY: ?		INSTALL INSUL JACKET	322	8760	_	
(GAS)							
ECO6 TOTAL:						-	0

## SYSTEMS CORP PAGE 4-15

	EVOAC EEAD ET KNOV	CINN TO		400 G	MATER COA	TIDY	100
	1 343 ELAF				C NO LE LOIN O	1001	2 OF 2
		Ö	ALCULAT	ON NOI	CALCULATION WORK SHEET 2		
FACILITY NO.:	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
	Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
ECO Number	Annual Water	Annual	Energy	Saving	WATER	Total	Total
ECO Type	Saving LPY	ELEC	ELEC KWH	GAS MWH	Dollar Saving	Dollar Saving	Dollars Invested
_	0			0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
သ	188,340				\$78.16	\$78.16	\$418.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$418.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
5	0			0	\$0.00	\$0.00	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
9	EST ANNUAL						
Water	HOT WTR			0.89		\$9.37	
Heater	CONSUMPTION			7.70		\$80.96	\$60.00
(GAS)	(LITERS)						
	43,946						
ECO6 TOTAL:	43,946	0	0	6	\$0.00	\$90.33	\$60.00

Systems Engineering and Management Corporation, Knoxville, TN

### SYSTEMS CORP PAGE 4-16

	FY94S EEAP FT	T. KN	. KNOX WATER CONSERVATION STUDY	S NOI	TUDY		162
	CAL	CULA	[준			DATE:	5 OCT 94
FACILITY NO.:	4859 A		FUNCTION:	,	UNACCON	A PERS	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:	•	24	1 82 TO	0
ECO Number	Existing Fixture System	٦	Retrofited Fixture System	٦	Usage	Fixtures	Water Leaks
ECO Type	Description		Description	LPM	HRS/YR	Quantity	Eliminated LPY
1 Layaton Sinks	SINK W/ AERATOR	9.5	NO RETROFIT	9.5	125	_	
Lavatoly Sillins							
ECO1 TOTAL:		LPM	· · · · · · · · · · · · · · · · · · ·	LPM		1	0
2	KITCHEN SINK	9.5	NO RETROFIT	9.5	365	3	0
Misc. Sinks							
ECO2 TOTAL:		LPF		LPF	#FL/YR	3	0
3	TANK TYPE	19	1.6 GPF TANK TYPE TOILET	6.1	7300	2	
Water Closets							
TOT COOL		ב ב			.0,0	ļ	
ECUS IOIAL:		7		LPF	#FL/YK	7	0
Urinals							
ECO4 TOTAL:	\$ 19 \$ 1 T	LPM	10.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1	LPM	HRS/YR		0
5	RESIDENTIAL TYPE	9.2	NO RETROFIT	9.5	245	2	0
Shower Heads							
ECOS TOTAL:	en e	TEMP		TEMP	A STATE OF THE STA	2	0
9	40 GAL RHEEM IMPERIAL						
Water	CAPACITY: 30,000 BTU/H	334	REDUCE STORAGE TEMP	322	8760	_	
Heater	RECOVERY: ?		INSTALL INSUL JACKET	322	8760	-	
(GAS)							
ECO6 TOTAL:				- 10		-	0

Systems Engineering and Management Corporation, Knoxville, TN

FACILITY NO.: Wat 4859 A	Water Rate:	0.42	\$/KL		Fnergy Rate:		
	•				am. (Rialla		#/KVVH
Gas	Gas Rate:	10.51	#WM/\$		Demand Rate:		\$/KW
ECO Number   An	Annual Water	Annual	Energy 5	Saving	WATER	Total	Total
FCO Type Sa	Saving LPY	ELEC	ELEC	GAS	Dollar Saving	Dollar Saving	Dollars invested
$\vdash$		╂─		0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
3	188,340				\$78.16	\$78.16	\$838.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$838.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
5	0			0	\$0.00	\$0.00	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
	EST ANNUAL			C		000	
	HOI WIR			0.09		49.5/	
	CONSUMPTION			7.70		\$80.96	\$60.00
(GAS)	(LITERS) 43.946						
ECO6 TOTAL:	43.946	0	0	6	\$0.00	\$90.33	\$60.00

Systems Engineering and Management Corporation, Knoxville, TN

	EVOAS EEAD ET	F KN	VALUE NOTANGEBUATION STILLS	O NO.	YOUT		1 2
	CAL	CULA	CALCULATION WORK SHEET 1			DATE	5
FACILITY NO.:	4870 C		FUNCTION:		UNACCON	A PERS	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:		TYPICAL (	TYPICAL OF 421 UNITS 24	SLIN
ECO Number	Existing Fixture System		Retrofited Fixture System	E	Usage	Fixtures	Water Leaks
ECO Type	Description	LPM	Description	LPM	HRS/YR	Quantity	Eliminated LPY
1	SINK W/ AERATOR	9.5	NO RETROFIT	9.5	125	-	
Lavatory Sinks	SINK W/ AERATOR	11.4	NO RETROFIT	11.4	125	1	
ECO1 TOTAL:		LPM		LPM	機能のでは、	2	0
2	KITCHEN SINK	11.4	NO RETROFIT	11.4	365	1	0
Misc. Sinks							
ECO2 TOTAL:		I PF		I PF	#FI /YR	-	0
3	TANK TYPE	19	1.6 GPF TANK TYPE TOILET	6.1	7300	2	
Water Closets						1	
ECO3 TOTAL:		LPF		LPF	#FL/YR	2	0
4							
Urinals							
ECO4 TOTAL:		LPM	2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	LPM	<b>HRS/YR</b>	0	0
5	RESIDENTIAL TYPE	9.2	NO RETROFIT	9.2	245	+	0
Shower Heads							
ECO5 TOTAL:		TEMP		TEMP	Section 1	-	0
9	40 GAL RHEEM IMPERIAL						
Water	CAPACITY: ?	334	REDUCE STORAGE TEMP	322	8760	-	
Heater	RECOVERY: ?		INSTALL INSUL JACKET	322	8760	1	
(GAS)							
ECO6 TOTAL:						-	0

Systems Engineering and Management Corporation, Knoxville, TN

## PAGE 4-19

Cas Rate:   0.42   \$/KL   Energy Rate:			CAL	ALCOLA!	ON WO	CULATION WORK SHEET 2		
Gas Rate:         10.51         \$\text{MWM}\$         Demand Rate:         Total           er         Annual Water         Annual Energy Saving         WATER         Total           Saving LPY         KW         KWH         MWH         Dollar Saving         F0.00           ks         0         0         \$0.00         \$0.00           c         0         \$0.00         \$0.00         \$0.00           c         0         \$0.00         \$0.00         \$0.00           c         \$0.00         \$0.00 <th></th> <th>er Rate:</th> <th>0.42</th> <th>\$/KL</th> <th></th> <th>Energy Rate:</th> <th></th> <th>\$/KWH</th>		er Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
er         Annual Water         Annual Energy Saving         WATER           Saving LPY KW KWH (WH)         ELEC ELEC GAS (GAS)         80.00           Iks 0         0         0         \$0.00           0         0         0         \$0.00           0         0         0         \$0.00           0         0         \$0.00         \$0.00           0         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00		Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
Saving LPY KW KWH MWH Dollar Saving   N	_	nual Water	Annual		Saving	WATER	Total	Total
Kis   0				ELEC	GAS	Dollar Saving	Dollar Saving	Dollars Invested
KS   0   \$0.00	╁	l			0	\$0.00	\$0.00	\$0.00
0	-avatory Sinks	0			0	\$0.00	\$0.00	\$0.00
s         0         0         \$0.00           s         0         0         \$0.00           s         0         0         \$0.00           ts         0         0         \$0.00           ts         0         0         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           HOT WTR         0.89         \$0.00           ALTERS         7.70         \$7.70		0			0	\$0.00	\$0.00	\$0.00
s         0         \$0.00           s         0         \$0.00           to         0         \$0.00           ts         0         \$0.00           ts         0         \$0.00           ts         0         \$0.00           ts         0         \$0.00           to         \$0.00         \$0.00           ds         0         \$0.00           test annual         0         \$0.00           thor with         0         \$0.00		0	0	0	0	\$0.00	\$0.00	\$0.00
s         0         \$0.00           0         0         \$0.00           188,340         0         0         \$0.00           ts         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00           188,340         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           ds         0         \$0.00           ds         0         \$0.00           EST ANNUAL         0         \$0.00           HOT WTR         0.089         \$0.00           CONSUMPTION         7.70	2	0			0	\$0.00	\$0.00	\$0.00
0	Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
188,340		0			0	\$0.00	\$0.00	\$0.00
188,340       \$78.16         188,340       \$0.00         188,340       \$0.00         188,340       \$0.00         188,340       \$0.00         0       \$0.00         0       \$0.00         ds       0       \$0.00         ds       0       \$0.00         ds       0       \$0.00         EST ANNUAL       0.89       \$0.00         HOT WITE       0.89       \$0.00         CONSUMPTION       7.70	O2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
its         0         \$0.00           0         \$0.00           188,340         \$78.16           0         \$0.00           0         \$0.00           ds         0         \$0.00           ds         0         \$0.00           ds         0         \$0.00           EST ANNUAL         0         \$0.00           HOT WTR         0.89         \$0.00           CONSUMPTION         7.70		188,340				\$78.16	\$78.16	\$838.80
188,340 \$0.00  188,340 \$0.00  0 \$0.00  0 \$0.00  ds 0 0 0 \$0.00  EST ANNUAL \$0.00  CONSUMPTION 7.70	Water Closets	0				\$0.00	\$0.00	\$0.00
188,340       \$78.16         0       \$0.00         0       \$0.00         0       \$0.00         ds       0       \$0.00         0       0       \$0.00         ds       0       \$0.00         eST ANNUAL       0.89       \$0.00         CONSUMPTION       7.70       \$0.00         (117FRS)       7.70       \$0.00		0				\$0.00	\$0.00	\$0.00
0         \$0.00           0         \$0.00           0         \$0.00           0         \$0.00           ds         0         \$0.00           0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00           HOT WIR         0.89         \$0.00           CONSUMPTION         7.70         \$0.00		188,340				\$78.16	\$78.16	\$838.80
0	4	0				\$0.00	\$0.00	\$0.00
0         \$0.00           0         \$0.00           ds         0         \$0.00           ds         0         \$0.00           0         0         \$0.00           EST ANNUAL         0.89         \$0.00           HOT WTR         0.89         7.70           CONSUMPTION         7.70         \$0.00	Urinals	0				\$0.00	\$0.00	\$0.00
0         \$0.00           0         \$0.00           0         \$0.00           0         \$0.00           EST ANNUAL         0.89           HOT WTR         0.89           CONSUMPTION         7.70		0				\$0.00	\$0.00	\$0.00
ds         0         \$0.00           ds         0         \$0.00           0         0         \$0.00           EST ANNUAL         0         \$0.00           HOT WTR         0.89         7.70           CONSUMPTION         7.70	O4 TOTAL:	0				\$0.00	\$0.00	\$0.00
ds         0         \$0.00           0         0         \$0.00           0         0         \$0.00           EST ANNUAL         0.89           HOT WTR         0.89           CONSUMPTION         7.70	5	0			0	\$0.00	\$0.00	\$0.00
0         0         \$0.00           0         0         \$0.00           EST ANNUAL         0.89         \$0.00           HOT WTR         0.89         7.70           CONSUMPTION         7.70         1TFRS)	Shower Heads	0			0	\$0.00	\$0.00	\$0.00
0         0         0         \$0.00           EST ANNUAL         0.89         0.89           HOT WTR         7.70           CONSUMPTION         7.70		0			0	\$0.00	\$0.00	\$0.00
EST ANNUAL   0.89		. 1	0	0	0	\$0.00	\$0.00	\$0.00
. CONSUMPTION 7.70	Ш	l. i						
CONSUMPTION 7.70		10T WTR			0.89		\$9.37	
		NOILLAN			7.70		\$80.96	\$60.00
	(GAS)	(LITERS)						
0000	+	42,04E	C		c	00 04	60000	0000
45,340	_	43,340		2	S	\$0.00	\$50.33	\$60.00

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT	T. KN	. KNOX WAT CONSERVATION STUDY	S NO	TUDY		1
	CAL	CULAT				DATE:	5 OCT 94
FACILITY NO.:	5353 F		FUNCTION:	_ ,.	UNACCOL	UNACCOM PERS HOUS	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:	'	24	5	0
ECO Number	Existing Fixture System		Retrofited Fixture System	u.	Usage	Fixtures	Water Leaks
ECO Type		LPM	Description	LPM	HRS/YR	Quantity	Eliminated LPY
1	SINK W/ AERATOR	9.5	NO RETROFIT	9.5	125	2	
Lavatory Sinks							
ECO4 TOTAL.		PW -		PMQ -	39 39 30 30 30 30 30 30 30 30 30 30 30 30 30	2	C
ECO! 101AL.	/ I 4 I O I A L I O H I Z		TITOOTI		700	7	
Micc Sinke	KI CHEN SINK	9.5	NO KETKOFII	ر ئ	365	-	D
misc. Office							
ECO2 TOTAL:		LPF		LPF	#FL/YR	1	0
3	TANK TYPE	19	1.6 GPF TANK TYPE TOILET	6.1	14600	Ψ-	
Water Closets							
ECO3 TOTAL:		- LPF		LPF	#FL/YR	1	0
7							
Urinals							
ECO4 TOTAL:		LPM	1997年の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の	LPM	HRS/YR	0	0
9	RESIDENTIAL TYPE	9.5	NO RETROFIT	9.5	245	1	0
Shower Heads							
ECO5 TOTAL:		TEMP		TEMP	18 (18 ) 18 (18 ) 18 (18 )	-	0
9	40 GAL RHEEM IMPERIAL						
Water	CAPACITY: ?	334	REDUCE STORAGE TEMP	322	8760	-	
Heater	RECOVERY: ?		INSTALL INSUL JACKET	322	8760	1	
(GAS)							
ECO6 TOTAL:						1	0

# Systems Engineering and Management Corporation, Knoxville, TN

CALCULATION WORK SHEET 2   CALCULATION WORK STATE   CALCULATION WATER   CALCULATION WATER   CALCULATION WATER   CALCULATION WATER   CALCULATION   CA	Total:	TYNO.:   Water Rate:   0.42   \$\frac{8}{10.00}\$   \$\frac{1}{2}\$   \$\frac{1}{	5							
TY NO :   Water Rate:   0.42   \$/KL     Energy Rate:   5/KV   5353 F   Gas Rate:   10.51   \$/MWM   Demand Rate:   5/KW   MWM   Dollar Saving   1   1   1   1   1   1   1   1   1	ITY NO :   Water Rate:   0.42   \$/KL	FACILITY NO.:         Water Rate:         0.42         \$/KL           5353 F         Gas Rate:         10.51         \$/MWH           ECO Number         Annual Water         Annual Energy         \$/MWH           ECO Type         Saving         LPY         KW         KWH           Lavatory Sinks         0         0         0           ECO1 TOTAL:         0         0         0           ECO1 TOTAL:         0         0         0           ECO2 TOTAL:         0         0         0           ECO2 TOTAL:         0         0         0           ECO3 TOTAL:         0         0         0           ECO3 TOTAL:         0         0         0           ECO3 TOTAL:         0         0         0           ECO4 TOTAL:         0         0         0           ECO4 TOTAL:         0         0         0           ECO5 TOTAL:         0         0         0           Water         Hoater         Ho	: v		CA	LCULAT	ION WO	RK SHEET 2		
Number   Annual Water   Annual Energy Saving   NATER   Total	ONUMBER         Annual Water         Annual Energy Saving LoT Yes         Demand Rate:         Total         \$KW           Number         Annual Water         Annual Energy Saving LoT Yes         Annual Energy Saving LoT Yes         MATER         Total           So Type         Saving LPY         KW         KWH         MWH         Dollar Saving S0.00         \$0.00           tory Sinks         0         0         0         \$0.00         \$0.00         \$0.00           TOTAL:         0         0         0         \$0.00         \$0.00         \$0.00           sc. Sinks         0         0         0         \$0.00         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00         \$0.00         \$0.00           TOTAL:         188,340         0         \$0.00         \$0.00         \$0.00         \$0.00           forall         0 </td <td>  Sasa Parter   10.51 \$/MWH</td> <td></td> <td>Rate:</td> <td>0.42</td> <td>\$/KL</td> <td></td> <td>Energy Rate:</td> <td></td> <td>\$/KWH</td>	Sasa Parter   10.51 \$/MWH		Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
O Number         Annual Water         Annual Electy Saving         WATER         Total           20 Type         Saving LPY         KWH         MWH         Dollar Saving         Dollar Saving           10 TOTAL:         0         0         0         \$0.00           10 TOTAL:         0         0         \$0.00           10 TOTAL:         0         0         \$0.00           10 Sc. Sinks         0         0         \$0.00           10 TOTAL:         0         0         \$0.00           10 TOTAL:         0         \$0.00         \$0.00           10 TOTAL:         0         \$0.00         \$0.00           10 TOTAL:         188,340         \$0.00         \$0.00           10 TOTAL:         0         \$0.00         \$0.00           10 Wer Heads         0         \$0.00         \$0.00           10 Sill         \$0.00         \$0.00         \$0.00           10 Sill         \$0.00         \$0.00         \$0.00           10 Sill<	O Number         Annual Water         Annual Energy Saving LPY         KWH         MWH         Dollar Saving B000         Total           100 Type         Saving LPY         KWH         MWH         Dollar Saving B000         \$0.00           100 TotAL:         0         0         \$0.00         \$0.00           100 TotAL:         0         0         \$0.00         \$0.00           20 Sinks         0         \$0.00         \$0.00         \$0.00           20 Sinks         0         \$0.00         \$0.00 </td <td>ECO Number         Annual Water         Annual ELEC           ECO Type         Saving         LPY         KWH         KWH           Lavatory Sinks         0         0         0         0           ECO1 TOTAL:         0         0         0         0         0           ECO1 TOTAL:         0<td></td><td>te:</td><td>ı</td><td>\$/MWH</td><td></td><td>Demand Rate:</td><td></td><td>\$/KW</td></td>	ECO Number         Annual Water         Annual ELEC           ECO Type         Saving         LPY         KWH         KWH           Lavatory Sinks         0         0         0         0           ECO1 TOTAL:         0         0         0         0         0           ECO1 TOTAL:         0 <td></td> <td>te:</td> <td>ı</td> <td>\$/MWH</td> <td></td> <td>Demand Rate:</td> <td></td> <td>\$/KW</td>		te:	ı	\$/MWH		Demand Rate:		\$/KW
CO Type         Saving LPY KW KWH KWH LOIIar Saving LOT Saving Sav	CO Type         Saving LPY         FLEC NWH         MWH         Dollar Saving \$0.00         FLEC NWH	ECO Type         Saving LPY KW KWH           1         0           Lavatory Sinks         0           CCO1 TOTAL:         0           D         0           ECO1 TOTAL:         0           Misc. Sinks         0           0         0           ECO2 TOTAL:         0           0         0           ECO2 TOTAL:         0           0         0           ECO3 TOTAL:         0           0         0           ECO3 TOTAL:         0           0         0           ECO4 TOTAL:         0           0         0           ECO5 TOTAL:         0           0         0           Shower Heads         0           0         0           ECO5 TOTAL:         0           0         0           ECO5 TOTAL:         0           6         EST ANNUAL           Water         HOT WTR           Heater         CONSUMPTION           (GAS)         (LITERS)           ECO6 TOTAL:         0           0         0           0         0		al Water	_		aving	WATER	Total	Total
ToTAL:         0         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00           Sc. Sinks         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           4         0         \$0.00         \$0.00         \$0.00           5         0         \$0.00         \$0.00         \$0.00           5         0         \$0.00         \$0.00         \$0.00           6         ESTANNUAL         0         \$0.00         \$0.00         \$0.00           6         ESTANNUAL         0         \$0.00         \$0.00	tory Sinks         0         0         50.00         50.00           TOTAL:         0         0         \$0.00         \$0.00           Sc. Sinks         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           Urinals         0         \$0.00         \$0.00         \$0.00           Urinals         0         \$0.00         \$0.00         \$0.00           TOTAL:         0         0         \$0.00	Lavatory Sinks				ELEC	GAS	Dollar Saving	Dollar Saving	Dollare Invested
tfory Sinks         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           Sc. Sinks         0         0         \$0.00         \$0.00           sc. Sinks         0         0         0         \$0.00           sc. Sinks         0         0         0         \$0.00           sc. Sinks         0         0         0         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           ser Closets         0         0         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00           to Closets         0         \$0.00         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00           4         0         \$0.00         \$0.00         \$0.00           4         0         \$0.00         \$0.00         \$0.00           5         0         \$0.00         \$0.00         \$0.00           5         0         \$0.00         \$0.00         \$0.00           6         EST ANINUAL         0         \$0.00         \$0.00	tfory Sinks         0         50.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           2. IOTAL:         0         0         \$0.00         \$0.00           sc. Sinks         0         0         0         \$0.00         \$0.00           sc. Sinks         0         0         0         \$0.00         \$0.00           sc. Sinks         0         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00         \$0.00           TOTAL:         188,340         0         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00         \$0.00         \$0.00           TOTAL:         0         0         0         \$0.00 </td <td>Lavatory Sinks         0           CCO1 TOTAL:         0         0           ECO1 TOTAL:         0         0           Misc. Sinks         0         0           ECO2 TOTAL:         0         0           Water Closets         0         0           ECO3 TOTAL:         0         0           ECO3 TOTAL:         0         0           Urinals         0         0           ECO4 TOTAL:         0         0           ECO5 TOTAL:         0         0           6         EST ANNUAL         HOT WIR           Heater         CONSUMPTION         CITTERS)           (GAS)         (LITERS)         0           ECO6 TOTAL:         43,946         0         0           ECO6 TOTAL:         43,946         0         0</td> <td></td> <td></td> <td>1</td> <td></td> <td>0</td> <td>\$0.00</td> <td>\$0.00</td> <td>\$0.00</td>	Lavatory Sinks         0           CCO1 TOTAL:         0         0           ECO1 TOTAL:         0         0           Misc. Sinks         0         0           ECO2 TOTAL:         0         0           Water Closets         0         0           ECO3 TOTAL:         0         0           ECO3 TOTAL:         0         0           Urinals         0         0           ECO4 TOTAL:         0         0           ECO5 TOTAL:         0         0           6         EST ANNUAL         HOT WIR           Heater         CONSUMPTION         CITTERS)           (GAS)         (LITERS)         0           ECO6 TOTAL:         43,946         0         0           ECO6 TOTAL:         43,946         0         0			1		0	\$0.00	\$0.00	\$0.00
TOTAL:         0         \$0.00         \$0.00           Sc. Sinks         0         0         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00           Sc. Sinks         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           TOTAL:         188,340         0         \$0.00         \$0.00           TOTAL:         188,340         0         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           Urinals         0         \$0.00         \$0.00         \$0.00           Very Heads         0         \$0.00         \$0.00         \$0.00           5         0         \$0.00         \$0.00         \$0.00           6         EST ANNUAL         0         \$0.00 <th< td=""><td>TOTAL:         0         \$0.00         \$0.00           Sc. Sinks         0         0         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00           sc. Sinks         0         0         0         \$0.00           TOTAL:         0         0         0         \$0.00           er Closets         0         0         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0         0         \$0.00</td><td>  0</td><td></td><td>0</td><td></td><td></td><td>0</td><td>\$0.00</td><td>\$0.00</td><td>\$0.00</td></th<>	TOTAL:         0         \$0.00         \$0.00           Sc. Sinks         0         0         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00           sc. Sinks         0         0         0         \$0.00           TOTAL:         0         0         0         \$0.00           er Closets         0         0         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0         0         \$0.00	0		0			0	\$0.00	\$0.00	\$0.00
TOTAL:         0         0         \$0.00         \$0.00           2         0         0         \$0.00         \$0.00           2         0         0         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00           Urinals         0         \$0.00         \$0.00         \$0.00           Urinals         0         \$0.00         \$0.00         \$0.00           Ver Heads         0         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           Ver Heads         0         \$0.00         \$0.00         \$0.00           F         0         \$0.00         \$0.00         \$0.00         \$0.00           Water         HOT WIR         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00 <td>TOTAL:         0         0         0         \$0.00           2         0         0         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           3         188,340         \$0.00         \$0.00         \$0.00           er Closets         0         0         \$0.00         \$0.00           er Closets         0         0         \$0.00         \$0.00           OTAL:         0         0         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           Urinals         0         \$0.00         \$0.00         \$0.00           Virinals         0         \$0.00         \$0.00         \$0.00           F         0         \$0.00         \$0.00         \$0.00           Virinals         0         \$0.00         \$0.00         \$0.00           F         0         \$0.00         \$0.00         \$0.00           Wet Heads         0         \$0.00         \$0.00         \$0.00           F         HOTALIPITION         \$0.00         \$0.00</td> <td>ECO1 TOTAL:         0         0         0           Z         0         0         0           Misc. Sinks         0         0         0           ECO2 TOTAL:         0         0         0           Water Closets         0         0         0           CO3 TOTAL:         188,340         0         0           ECO3 TOTAL:         0         0         0           ECO4 TOTAL:         0         0         0           ECO4 TOTAL:         0         0         0           ECO5 TOTAL:         0         0         0           ECO5 TOTAL:         HOT WTR         HOT WTR           Water         HOT WTR         HOT WTR           Heater         CONSUMPTION         0           GAS)         (LITERS)         43,946         0           ECO6 TOTAL:         43,946         0         0           ECO6 TOTAL:         43,946         0         0</td> <td></td> <td>0</td> <td></td> <td></td> <td>0</td> <td>\$0.00</td> <td>\$0.00</td> <td>\$0.00</td>	TOTAL:         0         0         0         \$0.00           2         0         0         \$0.00         \$0.00           sc. Sinks         0         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           3         188,340         \$0.00         \$0.00         \$0.00           er Closets         0         0         \$0.00         \$0.00           er Closets         0         0         \$0.00         \$0.00           OTAL:         0         0         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           Urinals         0         \$0.00         \$0.00         \$0.00           Virinals         0         \$0.00         \$0.00         \$0.00           F         0         \$0.00         \$0.00         \$0.00           Virinals         0         \$0.00         \$0.00         \$0.00           F         0         \$0.00         \$0.00         \$0.00           Wet Heads         0         \$0.00         \$0.00         \$0.00           F         HOTALIPITION         \$0.00         \$0.00	ECO1 TOTAL:         0         0         0           Z         0         0         0           Misc. Sinks         0         0         0           ECO2 TOTAL:         0         0         0           Water Closets         0         0         0           CO3 TOTAL:         188,340         0         0           ECO3 TOTAL:         0         0         0           ECO4 TOTAL:         0         0         0           ECO4 TOTAL:         0         0         0           ECO5 TOTAL:         0         0         0           ECO5 TOTAL:         HOT WTR         HOT WTR           Water         HOT WTR         HOT WTR           Heater         CONSUMPTION         0           GAS)         (LITERS)         43,946         0           ECO6 TOTAL:         43,946         0         0           ECO6 TOTAL:         43,946         0         0		0			0	\$0.00	\$0.00	\$0.00
2         0         \$0.00         \$0.00           sc. Sinks         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           TOTAL:         188,340         0         \$0.00         \$0.00           er Closets         0         \$0.00         \$0.00         \$0.00           er Closets         0         \$0.00         \$0.00         \$0.00           TOTAL:         188,340         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           Ver Heads         0         \$0.00         \$0.00         \$0.00           F         0         \$0.00         \$0.00         \$0.00           Nater         HOT WIR         0         \$0.00         \$0.00           G         EST ANNUAL         0         \$0.00         \$0.00           Water         HOT WIR         0.89         \$0.00         \$0.00           GAS)         (LITERS)         7.70         \$0.00         \$0.00           GAS)         (LITERS)         0         \$0.89         \$0.00           Resolution         0         0         \$0.00         <	2         0         \$0.00         \$0.00           sc. Sinks         0         \$0.00         \$0.00           TOTAL:         0         0         \$0.00         \$0.00           TOTAL:         188,340         0         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           TOTAL:         0         \$0.00         \$0.00         \$0.00           F         0         \$0.00         \$0.00         \$0.00           Ware Heads         0         \$0.00         \$0.00         \$0.00           Mater         HOT WTR         0.89         \$0.00         \$0.00           6         EST ANNUAL         0.89         \$0.00         \$0.00           6         EST ANNUAL         0.89         \$0.00         \$0.00           6         Heater         CONSUMPTION         7.70         \$0.00         \$0.00           43,946         0         0         \$0.	Z         0           Misc. Sinks         0           ECO2 TOTAL:         0         0           3         188,340         0           Water Closets         0         0           ECO3 TOTAL:         188,340         0           CCO3 TOTAL:         188,340         0           CCO3 TOTAL:         0         0           ECO4 TOTAL:         0         0           ECO5 TOTAL:         0         0           ECO5 TOTAL:         0         0           ECO5 TOTAL:         0         0           Water         HOT WTR         HOT WTR           Heater         CONSUMPTION         CONSUMPTION           (GAS)         (LITERS)         43,946         0           ECO6 TOTAL:         43,946         0         0           ECO6 TOTAL:         43,946         0         0	TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
s         0         \$0.00         \$0.00           st         0         \$0.00         \$0.00           to         0         \$0.00         \$0.00           sts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WIR         0.89         \$0.00         \$0.00           (LITERS)         \$0.00         \$0.00         \$0.00           43,946         \$0.00         \$0.00         \$0.00	s         0         \$0.00 </td <td>Misc. Sinks         0         0           ECO2 TOTAL:         0         0         0           BCO2 TOTAL:         0         0         0           CCO3 TOTAL:         188,340         0         0           ECO3 TOTAL:         188,340         0         0           ECO4 TOTAL:         0         0         0         0           ECO4 TOTAL:         0         0         0         0           ECO5 TOTAL:         0         0         0         0           ECO5 TOTAL:         0         0         0         0           ECO5 TOTAL:         0         0         0           ECO5 TOTAL:         HOT WITE         0         0           Water         HOT WITE         0         0           (GAS)         (LITERS)         43,946         0         0           ECO6 TOTAL:         43,946         0         0         0           ECO6 TOTAL:         43,946         0         0         0</td> <td>2</td> <td>0</td> <td></td> <td></td> <td>0</td> <td>\$0.00</td> <td>\$0.00</td> <td>\$0.00</td>	Misc. Sinks         0         0           ECO2 TOTAL:         0         0         0           BCO2 TOTAL:         0         0         0           CCO3 TOTAL:         188,340         0         0           ECO3 TOTAL:         188,340         0         0           ECO4 TOTAL:         0         0         0         0           ECO4 TOTAL:         0         0         0         0           ECO5 TOTAL:         0         0         0         0           ECO5 TOTAL:         0         0         0         0           ECO5 TOTAL:         0         0         0           ECO5 TOTAL:         HOT WITE         0         0           Water         HOT WITE         0         0           (GAS)         (LITERS)         43,946         0         0           ECO6 TOTAL:         43,946         0         0         0           ECO6 TOTAL:         43,946         0         0         0	2	0			0	\$0.00	\$0.00	\$0.00
0         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           ts         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           (LITERS)         \$0.00         \$0.00         \$0.00           43,946         \$0.00         \$0.00         \$0.00	0         0         \$0.00         \$0.00           40         0         \$0.00         \$0.00           4188,340         \$0.00         \$0.00         \$0.00           42,340         \$0.00         \$0.00         \$0.00           4188,340         \$0.00         \$0.00         \$0.00           4188,340         \$0.00         \$0.00         \$0.00           50         \$0.00         \$0.00         \$0.00           60         \$0.00         \$0.00         \$0.00           60         \$0.00         \$0.00         \$0.00           60         \$0.00         \$0.00         \$0.00           60         \$0.00         \$0.00         \$0.00           80.00         \$0.00         \$0.00         \$0.00           80.00         \$0.00         \$0.00         \$0.00           80.00         \$0.00         \$0.00         \$0.00           80.00         \$0.00         \$0.00         \$0.00           80.00         \$0.00         \$0.00         \$0.00           80.00         \$0.00         \$0.00         \$0.00           80.00         \$0.00         \$0.00         \$0.00           80.00         \$0.00 <th< td=""><td>CCO2 TOTAL:         0         0         0           3         188,340         0         0           Water Closets         0         0         0           ECO3 TOTAL:         188,340         0         0           Urinals         0         0         0           ECO4 TOTAL:         0         0         0           ECO4 TOTAL:         0         0         0           ECO5 TOTAL:         0         0         0           ECO5 TOTAL:         0         0         0           ECO5 TOTAL:         0         0         0           Water         HOT WIR         0         0           GAS)         (LITERS)         43,946         0           ECO6 TOTAL:         43,946         0         0           ECO6 TOTAL:         43,946         0         0</td><td></td><td>0</td><td></td><td></td><td>0</td><td>\$0.00</td><td>\$0.00</td><td>\$0.00</td></th<>	CCO2 TOTAL:         0         0         0           3         188,340         0         0           Water Closets         0         0         0           ECO3 TOTAL:         188,340         0         0           Urinals         0         0         0           ECO4 TOTAL:         0         0         0           ECO4 TOTAL:         0         0         0           ECO5 TOTAL:         0         0         0           ECO5 TOTAL:         0         0         0           ECO5 TOTAL:         0         0         0           Water         HOT WIR         0         0           GAS)         (LITERS)         43,946         0           ECO6 TOTAL:         43,946         0         0           ECO6 TOTAL:         43,946         0         0		0			0	\$0.00	\$0.00	\$0.00
o         0         \$0.00         \$0.00           its         0         \$0.00         \$0.00           its         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00           188,340         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           4s         \$0         \$0         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           EST ANNUAL         \$0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$0.00         \$0.00           43.946         \$0.89         \$0.00         \$0.00	observed         \$0.00         \$0.00         \$0.00           its         0         \$0.00         \$0.00         \$0.00           its         0         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00         \$0.00           HOT WTR         0         \$0.00         \$0.00         \$0.00           CONSUMPTION         7.70         \$0.00         \$0.00           43,946         0         \$0.00         \$0.00         \$0.00           43,946         0         \$0.00         \$0.00         \$0.00	ECO2 TOTAL:         0         0         0           3         188,340         0         0           Water Closets         0         0         0           ECO3 TOTAL:         188,340         0         0           Urinals         0         0         0           ECO4 TOTAL:         0         0         0           ECO5 TOTAL:         0         0         0           Water         HOT WTR         HOT WTR         HOT WTR           (GAS)         (LITERS)         43,946         0         0           ECO6 TOTAL:         43,946         0         0           ECO5 TOTAL:         43,946         0         0		0			0	\$0.00	\$0.00	\$0.00
its         \$78.16         \$78.16           its         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           EST ANNUAL         \$0.89         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           (LITERS)         7.70         \$80.96           (LITERS)         \$0.89         \$0.00         \$0.00	188,340         \$78.16         \$78.16           its         0         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           4s         \$0         \$0         \$0.00           0         \$0.00         \$0.00         \$0.00           EST ANNUAL         \$0.09         \$0.00         \$0.00           HOT WIR         \$0.89         \$0.00         \$0.00           (LITERS)         \$0.00         \$0.00         \$0.00           43,946         0         9         \$0.00         \$0.00           43,946         0         9         \$0.00         \$0.00	3         188,340           Water Closets         0           ECO3 TOTAL:         188,340           4         0           4         0           4         0           Urinals         0           ECO4 TOTAL:         0           5         0           ECO4 TOTAL:         0           6         EST ANNUAL           6         EST ANNUAL           Heater         HOT WTR           Heater         CONSUMPTION           (GAS)         (LITERS)           43,946         0           ECO6 TOTAL:         43,946           ECO6 TOTAL:         43,946		0	0	0	0	\$0.00	\$0.00	\$0.00
its         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           EST ANNUAL         0.89         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           (LITERS)         7.70         \$80.96           43,946         6.89         \$0.00	tfs         0         \$0.00         \$0.00           tfs         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           EST ANNUAL         \$0.89         \$0.00         \$0.00           HOT WITE         \$0.89         \$0.00         \$0.00           (LITERS)         \$0.00         \$0.00         \$0.00           43,946         0         9         \$0.00         \$0.33	Water Closets         0           ECO3 TOTAL:         188,340           4         0           4         0           Urinals         0           ECO4 TOTAL:         0           5         0           Shower Heads         0           6         EST ANNUAL           6         EST ANNUAL           Water         HOT WTR           Heater         CONSUMPTION           (GAS)         (LITERS)           43,946         0           CCO6 TOTAL:         43,946           ECO6 TOTAL:         43,946		3,340				\$78.16	\$78.16	\$418.80
0         \$0.00         \$0.00           188,340         \$78.16         \$78.16           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           ds         0         \$0.00           ds         0         \$0.00           ds         0         \$0.00           EST ANNUAL         0         \$0.00           HOT WTR         0.89         \$0.00           CONSUMPTION         7.70         \$80.96           (LITERS)         43.946         \$0.00	0         \$0.00         \$0.00           188,340         \$78.16         \$78.16           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           EST ANNUAL         \$0.89         \$0.00           HOT WIR         \$0.89         \$0.00           (LITERS)         \$0.00         \$0.00           43,946         \$0.00         \$0.00	0		0				\$0.00	\$0.00	\$0.00
188,340         \$78.16         \$78.16           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           ds         0         \$0.00           ds         0         \$0.00           ds         0         \$0.00           eST ANNUAL         0         \$0.00           HOT WTR         0.89         \$0.00           CONSUMPTION         7.70         \$80.96           (LITERS)         43.946         \$0.00	188,340         \$78.16         \$78.16           0         0         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           ds         0         0         \$0.00         \$0.00           ds         0         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96         \$0.37           43.946         0         9         \$0.00         \$90.33	ECO3 TOTAL:         188,340           4         0           Urinals         0           ECO4 TOTAL:         0           5         0           Shower Heads         0           CO5 TOTAL:         0           ECO5 TOTAL:         0           6         EST ANNUAL           Heater         HOT WIR           Water         HOT WIR           GAS)         (LITERS)           (GAS)         (LITERS)           ECO6 TOTAL:         43,946         0           SYSTEMS CORP		0				\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.00           0         \$0.00         \$0.00           0         \$0.00         \$0.00           ads         0         \$0.00         \$0.00           ads         0         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96           43.946         80.00         \$0.00	0         \$0.00         \$0.00           0         \$0.00         \$0.00           color         \$0.00         \$0.00           ads         0         \$0.00         \$0.00           color         \$0.00         \$0.00         \$0.00           color         \$0         \$0.00         \$0.00           color         \$0.00         \$0.00         \$0.00           color         \$0.00         \$0.00         \$0.00           color         \$0.00         \$0.00         \$0.00           color         \$0.00         \$0.00         \$0.00           day,946         0         \$0.00         \$0.00           day,946         0         \$0.00         \$0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		3,340				\$78.16	\$78.16	\$418.80
0         \$0.00         \$0.00           c         \$0.00         \$0.00           \$0.00         \$0.00         \$0.00           \$0.00         \$0.00         \$0.00           \$0.00         \$0.00         \$0.00           \$0.30         \$0.00         \$0.00           \$0.89         \$0.00         \$0.00           \$0.30         \$0.30         \$0.00           \$0.43,946         \$0.00         \$0.00	0         \$0.00         \$0.00           c         \$0.00         \$0.00           c         \$0.00         \$0.00           c         \$0.00         \$0.00           c         0         \$0.00         \$0.00           c         0         \$0.00         \$0.00           c         \$0.00         \$0.00         \$0.00           c         CONSUMPTION         7.70         \$80.96           CLITERS)         0         0         \$0.00         \$80.96           43,946         0         9         \$0.00         \$90.33	0   0   0   0   0   0   0   0   0   0		0	-			\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.00           ads         0         \$0.00         \$0.00           ads         0         \$0.00         \$0.00         \$0.00           :         0         0         \$0.00         \$0.00         \$0.00           :         0         0         \$0.00         \$0.00         \$0.00         \$0.00           HOT WIR         0.89         \$0.00         \$0.00         \$0.00         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96         \$0.00	0         \$0.00         \$0.00         \$0.00           4st         \$0.00         \$0.00         \$0.00           4st         0         \$0.00         \$0.00         \$0.00           5         0         \$0.00         \$0.00         \$0.00           5         0         \$0.00         \$0.00         \$0.00           5         0         \$0.00         \$0.00         \$0.00           6         CONSUMPTION         7.70         \$80.96         \$0.00           6         43,946         0         0         \$0.00         \$0.00         \$0.00         \$0.00           7         43,946         0         0         9         \$0.00         \$0.00         \$0.00	0   0   0   0   0   0   0   0   0   0		0				\$0.00	\$0.00	\$0.00
:         0         \$0.00         \$0.00           ads         0         \$0.00         \$0.00           :         0         \$0.00         \$0.00           :         0         0         \$0.00           :         0         0         \$0.00           :         0         0         \$0.00           :         0         \$0.00         \$0.00           HOT WIR         0.89         \$0.00         \$0.37           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946         6.00	i.         0         \$0.00         \$0.00           ids         0         \$0.00         \$0.00           i.         0         0         \$0.00         \$0.00           i.         0         0         \$0.00         \$0.00           i.         EST ANNUAL         0         0         \$0.00         \$0.00           HOT WTR         0.89         \$0.00         \$0.37         \$0.00           CONSUMPTION         7.70         \$80.96         \$0.00           43,946         0         9         \$0.00         \$00.33	ECO4 TOTAL:         0           Shower Heads         0           CCO5 TOTAL:         0         0           ECO5 TOTAL:         0         0           Water         HOT WTR         HOT WTR           Heater         CONSUMPTION         43,946           ECO6 TOTAL:         43,946         0           ECO6 TOTAL:         43,946         0           SYSTEMS CORP		0				\$0.00	\$0.00	\$0.00
ads         0         \$0.00         \$0.00           ads         0         \$0.00         \$0.00           :         0         0         \$0.00         \$0.00           :         0         0         \$0.00         \$0.00           :         0         0         \$0.00         \$0.00           EST ANNUAL         0.89         \$0.00         \$0.37           HOT WIR         0.89         \$9.37           CONSUMPTION         7.70         \$80.96           (LITERS)         \$80.96           43,946         0         0	ads         0         \$0.00         \$0.00           ads         0         \$0.00         \$0.00           :         0         0         \$0.00         \$0.00           :         0         0         \$0.00         \$0.00           :         0         0         \$0.00         \$0.00           :         EST ANNUAL         0.89         \$0.00         \$0.00           HOT WIR         0.89         \$0.37         \$0.00           CONSUMPTION         7.70         \$80.96         \$0.00           43,946         0         9         \$0.00         \$0.33	5         0           Shower Heads         0           CCOS TOTAL:         0         0           6         EST ANNUAL         0         0           Water         HOT WTR         HOT WTR         CONSUMPTION         43,946           CGAS)         (LITERS)         43,946         0         0           ECOG TOTAL:         43,946         0         0           SYSTEMS CORP		0				\$0.00	\$0.00	\$0.00
ads         0         \$0.00         \$0.00           :         0         0         \$0.00         \$0.00           :         0         0         \$0.00         \$0.00           :         0         0         \$0.00         \$0.00           HOT WIR         0.89         \$9.37         \$0.00           CONSUMPTION         7.70         \$80.96         \$43,946	ads         0         \$0.00         \$0.00         \$0.00           :         0         0         \$0.00         \$0.00         \$0.00           :         0         0         \$0.00         \$0.00         \$0.00         \$0.00           EST ANNUAL         0.89         \$0.00         \$0.37         \$0.00	Shower Heads         0         0           CCO5 TOTAL:         0         0           6         EST ANNUAL         0           Water         HOT WTR         CONSUMPTION           Heater         CONSUMPTION         43,946           CCO6 TOTAL:         43,946         0           SYSTEMS CORP		0			0	\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.00           CONSUMPTION         7.70         \$80.96           43,946         \$0.00         \$0.00           \$0.00         \$0.00         \$0.00           \$0.00         \$0.00         \$0.00           \$0.00         \$0.00         \$0.00           \$0.00         \$0.00         \$0.00	0         0         \$0.00 </td <td>  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td></td> <td>0</td> <td></td> <td></td> <td>0</td> <td>\$0.00</td> <td>\$0.00</td> <td>\$0.00</td>	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0			0	\$0.00	\$0.00	\$0.00
:         0         0         \$0.00           EST ANNUAL         0.89         \$9.37           HOT WTR         7.70         \$80.96           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946	:         0         0         \$0.00         \$0.00           EST ANNUAL         0.89         \$9.37           HOT WTR         7.70         \$80.96           CONSUMPTION         7.70         \$80.96           (LITERS)         43.946         9         \$0.00         \$90.33	ECO5 TOTAL:         0         0         0           6         EST ANNUAL         0         0           Water         HOT WTR         CONSUMPTION         43,946         0         0           ECO6 TOTAL:         43,946         0         0         0           SYSTEMS CORP         43,946         0         0		0			0	\$0.00	\$0.00	\$0.00
EST ANNUAL         0.89         \$9.37           HOT WTR         7.70         \$80.96           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946	EST ANNUAL       0.89       \$9.37         HOT WTR       7.70       \$80.96         CONSUMPTION       7.70       \$80.96         (LITERS)       43,946       0       9       \$0.00       \$90.33	6         EST ANNUAL           Water         HOT WTR           Heater         CONSUMPTION           (GAS)         (LITERS)           ECO6 TOTAL:         43,946         0           SYSTEMS CORP	:	0	0	0	0	\$0.00	\$0.00	\$0.00
HOT WIR 0.89 \$9.37 CONSUMPTION 7.70 \$80.96 (LITERS) 43,946	HOLIWIR 0.89 \$9.37 CONSUMPTION 7.70 \$80.96 (LITERS) \$43,946 0 0 9 \$0.00 \$90.33	Water         HOT WIR           Heater         CONSUMPTION           (GAS)         (LITERS)           ECO6 TOTAL:         43,946         0           SYSTEMS CORP		ANNUAL			0			
CONSUMPTION         7.70         \$80.96           (LITERS)         43,946	CONSUMPTION         7.70         \$80.96           (LITERS)         43,946         0         9         \$0.00         \$90.33	Heater         CONSUMPTION           (GAS)         (LITERS)           43,946         0           ECO6 TOTAL:         43,946           SYSTEMS CORP		종 왕			0.89		\$9.37	
(LITERS) 43,946	(LITERS) 43,946 43,946 0 9 \$0.00 \$90.33	(GAS)         (LITERS)           43,946         0           ECO6 TOTAL:         43,946         0           SYSTEMS CORP		UMPTION			7.70		\$80.96	\$60.00
	43,946 0 0 9 \$0.00 \$90.33	ECOG TOTAL: 43,946 0 0 SYSTEMS CORP		TERS)						
	43,946 0 0 9 \$0.00 \$90.33	SYSTEMS CORP	1					000	CC CC#	0000

Systems Engineering and Management Corporation, Knoxville, TN

T 3
FY94S WATER CONSERVATION STUDY (WATER AND ENERGY), FT. KNOX, KY

This section contains the project description and the DD1391 forms for ECIP Project FH-3, Family Housing Water Conservation Phase III improvements to 1,268 Family Housing Units. Two lists of the buildings included in the project follow the DD1391 forms. The first list includes all buildings considered in the project in numerical order. The second list shows which buildings were used to model unsurveyed buildings. Following these lists are the LCCID report and the cost estimate for the proposed project. Calculation sheets for the individual buildings follow the project cost estimate. Below is a detailed index of the information included in this section.

DD1391 Form	5-2
Table 5.1 ECIP FH-3 - Family Housing	5-6
Table 5.2 Buildings Modeled by Surveyed Buildings	
Project LCCID Report	
Catalog Cut Sheets/Product Information	
Project Cost Estimate	
Building Calculation Sheets	

DATE:

22 December 1994

PROJECT NO.:

ECIP-FH3

PROJECT TITLE:

Family Housing Water Conservation Phase III

INSTALLATION:

Fort Knox

LOCATION:

Kentucky

### PRIMARY FACILITY

Water Closets	\$981,000
---------------	-----------

ESTIMATED CONTRACT COST	\$810,000
CONTINGENCY PERCENT (10%)	81,000
SUBTOTAL	891,000
SUPERVISION, INSPECTION & OVERHEAD (5%)	44,550
DESIGN COST	44,550
TOTAL REQUEST	980,100
TOTAL REQUEST (ROUNDED)	\$981,000

Replace water closets in 1268 family housing units with water saving, 6 liters (1.6 gallons) per flush water closets. All water closets will be of the flush tank type. The project will significantly reduce potable water consumption and sanitary waste production.

DATE:

22 December 1994

PROJECT NO.:

ECIP-FH3

PROJECT TITLE:

Family Housing Water Conservation Phase III

INSTALLATION:

Fort Knox

LOCATION:

Kentucky

### PROJECT:

Replace water closets in 1268 family housing units with water saving, 6 liters (1.6 gallons) per flush water closets.

### REQUIREMENTS:

Fort Knox utilizes inefficient outdated water closets in its family housing units. The existing water closets consume significantly more water and generate greater quantities of sanitary waste per flush than the new standard water saving water closet. The existing inefficient systems place greater demand on the water table, water treatment plant and waste treatment plant. The U.S. Army Corp of Engineers, Louisville District, contracted an Energy Engineering Analysis Program (EEAP) Water Conservation Study of the Post. The study identified energy and water conservation opportunities. Life cycle cost analysis was performed on each opportunity to determine its discounted savings-to-investment ratio (SIR) and estimated payback period. This project has a SIR of 2.24 and a simple payback period of 6.63 years. The project exceeds the minimum requirements of an SIR greater than 1.25 and a simple payback of less than 10 years.

### **CURRENT SITUATION:**

The family housing units at Ft. Knox have inefficient water closets. The family housing units consume more water and generate more sanitary waste than is necessary. The new water closets will greatly reduce the water consumption and waste generated.

### IMPACT IF NOT PROVIDED:

If this project is not implemented, 1268 family housing units will continue to consume more water and generate more waste than necessary. The U.S. Army will fail to realize an estimated \$148K in annual savings (FY95\$) and a total discounted savings of \$2.2M during the twenty year life of the project.

### ADDITIONAL:

A life cycle cost analysis was performed on the project. The project will realize water savings of over 2.2 times the initial investment cost and will pay for itself in less than 6.7 years.

Ft. Knox is not on the list of installations considered for closure or realignment.

DATE:

22 December 1994

PROJECT NO.:

ECIP-FH3

PROJECT TITLE:

Family Housing Water Conservation Phase III

INSTALLATION:

Fort Knox

LOCATION:

Kentucky

SECTION 11 - ECONOMIC ANALYSIS DATA

11D ECONOMIC JUSTIFICATION SUMMARY

This water conservation project is recommended for funding. A life cycle cost analysis was performed on each portion of this project and on the overall project. The overall project will realize water savings of over 2.2 times the initial investment cost and will pay for itself in less than 6.7 years.

TABLE 5.1 ECIP FH-3 - FAMILY HOUSING

5201 A II	5423 A-D	5548 A-D	5849 B
5301 A-H	5424 A-D	5551 A-H	5850 A-D
5305 A-H	!	5551 A-H	5851 A, B
5308 A-G	5425 A-H	5552 A-H	5852 A-D
5309 A-D	5426 A-D	5553 A	5853 A, B
5312 A-D	5428 A-D	5553 B - 5567 B	5872
5313 A-D	5429 A-D	5560 A	5873 A - 5885 A, B
5314	5430 A-D	5562 A - 5577 A	5897 A,B
5318 A-D	5431 A-D	5568	3097 A,B
5319 A-D	5434 A-H		
5324 A-H	5435 A-H	5569 B - 5577 B	
5325 A-H	5437 A-D	5600 AQ 5600 B	
5328 A-H	5440 A-D	5602 A	
5331 A-D	5443 A-D	5602 B - 5641 B	
5333 A-D	5445 A-D	5641 A	
5335 A-D	5446 AQ-H	5642 A-H	
5337 A-H	5447 A-H 5448 A-D	5642 A-H	
5338 A-D		5643 A	
5339 A-H	5451 A-D	5643 B	
5341 A-D	5452 A-H	5644 A-H	
5342 A-H	5453 A-D	5645 A	
5343 A-D	5455 A-H	5645 B	
5345 A-D	5458 A-D	5647 A	
5346 A-H	5459 A-H	5647 B	
5349 A-H	5460 A-D	5648 A-D	
5350 A-D	5462 A-D	5652 A-D	
5351 A-H	5464 A-D	5653 A - 5671 A	
5352 A-H	5465 A-H	5653 B - 5671 B	
5356 A-H	5467 A-H	5661	
5359 A-D	5468 A-D 5469 A-D	5700 A - 5701 A	
5363 A-D	5470 A-H - 5475 A-C	5700 B - 5701 B	
5369 A-D 5371 A-D	5470 A-H - 5475 A-C	5700 B - 3701 B	
5371 A-D 5372 A-D	5475 E-H - 5478 A-H	5703 B	
5402 A-H	5476 A-H	5705 A - 5780 A	
5402 A-H 5405 A-H	5480 A-H	5705 B - 5760 B	
5405 A-H 5406	5480 A-H	5800 A-D	
5408 A-H	5481 A-D	5801 A, B	
5410 A-D	5482 A-D	5802 A-D	
5413 A-H	5483 A-H - 5491 A-H	5803 A, B - 5817 A, B	
5414 A-D	5486 A-H	5818 A	
5416 A-D	5489 A-H	5818 B - 5747 B	
5418 A-D	5491 A-D	5847 A	
5419 A-H	5493 A-D	5848 A-D	
5420 A-H	5494 A-H	5849 A	
JHLU M*II	ションオ ハニメメ	JU 17 11	

TABLE 5.2 BUILDINGS MODELED BY SURVEYED BUILDINGS

BUILDINGS SURVEYED AND CALCULATED	BUILDINGS ASSUMED TYPICAL OF SURVEYED BUILDINGS
5568	5553B - 5567B, 5569B - 5577B, 5600B, 5602B - 5641B, 5643B, 5645B, 5647B, 5653B - 5671B, 5700B - 5701B, 5703B, 5705B - 5760B, 5818B - 5847B, 5749B
5661	5553A - 5560A, 5562A - 5577A, 5600A, 5602A - 5641A, 5643A, 5645A, 5647A, 5653A - 5671A, 5700A - 5701A, 5703A, 5705A - 5760A, 5818A - 5847A, 5849A
5672	5673A & B - 5685A & B, 5801A & B, 5803A & B - 5817A & B, 5851A & B, 5853A & B - 5897A & B
5314	5308A-D, 5309A-D, 5312A-D, 5313A-D, 5318A-D, 5319A-D, 5331A-D - 5333A-D, 5335A-D, 5338A-D, 5341A-D, 5343A-D, 5345A-D, 5350A-D, 5359A-D - 5363A-D, 5369A-D, 5371A-D, 5372A-D, 5410A-D, 5414A-D, 5416A-D, 5418A-D, 5423A-D, 5424A-D, 5426A-D, 5428A-D, 5429A-D, 5431A-D, 5437A-D, 5430A-D, 5440A-D, 5443A-D, 5445A-D, 5448A-D, 5451A-D, 5453A-D, 5456A-D, 5460A-D, 5462A-D - 5464A-D, 5468A-D, 5469A-D, 5481A-D, 5482A-D, 5491A-D, 5493A-D, 6546A-D, 5648A-D - 5652A-D, 5800A-D, 5802A-D, 5848A-D, 5850A-D, 5852A-D
5406	5465A-H - 5467A-H, 5470A-H - 5475A-C, 5475E-H - 5478A-H, 5480A-H, 5483A-H - 5491A-H, 5494A-H, 5551A-H, 5552A-H, 5642A-H, 5644A-H
5475	
9053*	53014A-H, 5305A-H, 5324A-H, 5325A-H, 5328A-H, 5337A-H, 5339A-H, 5342A-H, 5346A-H, 5349A-H, 5351A-H, 5352A-H, 5356A-H, 5402A-H, 5405A-H, 5408A-H, 5413A-H, 5419A-H, 5420A-H, 5425A-H, 5434A-H, 5435A-H, 5446A-H, 5447A-H, 5452A-H, 5455A-H, 5459A-H, 5476A-H, 5480A-H, 5486A-H, 5489A-H, 5551AQ-H, 5642A-H  *Surveyed building not included in this project. It is covered under Project Group 1.

STUDY: ECIP-FH3 LIFE CYCLE COST ANALYSIS SUMMARY ENERGY CONSERVATION INVESTMENT PROGRAM (ECIP) LCCID FY95 (92) INSTALLATION & LOCATION: FT KNOX REGION NOS. 4 CENSUS: 3 PROJECT NO. & TITLE: ECIP-FH3 FAMILY HOUSING PROJECT 3 FISCAL YEAR 1995 DISCRETE PORTION NAME: WATER ANALYSIS DATE: 12-27-94 ECONOMIC LIFE 20 YEARS PREPARED BY: DERRINGTON 1. INVESTMENT A. CONSTRUCTION COST 891000. B. SIOH 44550. C. DESIGN COST 44550. D. TOTAL COST (1A+1B+1C) \$ 980100. 0. E. SALVAGE VALUE OF EXISTING EQUIPMENT \$ F. PUBLIC UTILITY COMPANY REBATE 0. 980100. G. TOTAL INVESTMENT (1D - 1E - 1F) 1. 1. 1. 2. ENERGY SAVINGS (+) / COST (-) DATE OF NISTIR 85-3273-X USED FOR DISCOUNT FACTORS OCT 1994 UNIT COST SAVINGS ANNUAL \$ DISCOUNT DISCOUNTED MWH/YR(2) SAVINGS(3) FACTOR(4) SAVINGS(5) FUEL \$ / MWH(1) 15.08 0. A. ELECT \$ 46.40 0. Ο. 18.57 0. B. DIST \$ .00 0. C. RESID \$ .00 0. Ο. 21.02 0. 18.58 D. NAT G \$ 10.51 Ο. 0. 0. 0. 0. E. COAL \$ .00 Ο. 16.83 0. 17.38 0. F. PPG .00 Ο. 14.88 0. M. DEMAND SAVINGS 0. Ο. N. TOTAL 3. NON ENERGY SAVINGS(+) / COST(-) 98900. A. ANNUAL RECURRING (+/-) (1) DISCOUNT FACTOR (TABLE A) 14.88 (2) DISCOUNTED SAVING/COST (3A X 3A1) 1471632. B. NON RECURRING SAVINGS (+) / COSTS (-) SAVINGS(+) YR DISCNT DISCOUNTED FACTR SAVINGS(+)/ COST(-) OC ITEM (3) COST(-)(4) (1) (2) .74 725274. \$ 980100. 10 1. REPLACEMENT 725274. \$ 980100. d. TOTAL C. TOTAL NON ENERGY DISCOUNTED SAVINGS(+)/COST(-)(3A2+3Bd4)\$ 2196906. 4. FIRST YEAR DOLLAR SAVINGS 2N3+3A+(3Bd1/(YRS ECONOMIC LIFE))\$ 147905. 6.63 YEARS 5. SIMPLE PAYBACK PERIOD (1G/4) \$ 2196906. 6. TOTAL NET DISCOUNTED SAVINGS (2N5+3C) 7. SAVINGS TO INVESTMENT RATIO (IF < 1 PROJECT DOES NOT QUALIFY) (SIR) = (6 / 1G) =2.24 \*\*\*\* Project does not qualify for ECIP funding; 4,5,6 for information only.

8. ADJUSTED INTERNAL RATE OF RETURN (AIRR):

PAGE 5 -8

N/A



- · Water-saving 1.5 gallon flush.
- Features Pressure-Clean™ flushometer tank system.
- Three-bolt quick connect system with factory-installed tank gasket and bolts.

K-3458 Wellworth Lite PC Toilet, vitreous china, 1.5 gallon flush. Close-coupled design with elongated bowl. Minimum roughing-in is 12" (305 mm).

Tank/bowl combination includes K-4333 bowl, K-4470 vitreous china tank with Kohler 81100 flushometer tank system, K-4471 tank cover and K-9434 chrome-plated trip lever.

IMPORTANT—For most satisfactory operation, a minimum static water pressure of 25 P.S.I. is required at the toilet supply inlet.

Recommended Seats and Supply K-4650 Lustra™ solid plastic seat with open front and cover.

**K-4652** Lustra solid plastic seat with closed front and cover.

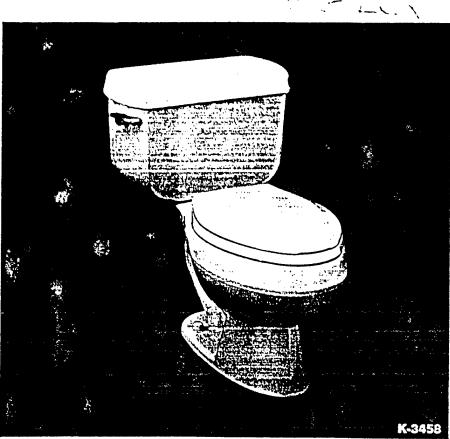
K-4670-C Lustra solid plastic seat (K-4681-C Black Black™) with open front and check hinge.

K-7637 %" angle supply with stop.

Tank Locks—Add suffix "-T" to product number.

Bedpan Lugs—Add suffix "-L" to product number.

For complete color selection, see Colors section.

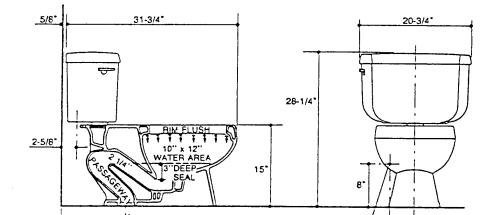


Wellworth Lite PC Toilet and Lustra seat (K-4652) in White.

€ OF OUTLET

12

U.S. Pat. Pending



3/8" I.P.S. SUPPLY





\$0 \$742,618

Estimate: ECO - 3 Date: 15-Dec-94
Description: INSTALL WATER CLOSETS - FAMILY HOUSING
Project: LIMITED EEAP (WTR)Bid Date:
Location: FORT KNOX, KY Job #: 94013.03
Sq. footage: FAM HSG - GP 3 City indx:Louisville, KY

Line # Description

Manhours Matl Labor Equipment Sub Total

1521801100 ECO - 3 INSTALL NEW WATER SAVING WATER CLOSET, TANK TYPE,
FLOOR MNTD, 2PC WHITE W/SEAT, 1.6 GPF 2126.00 Ea.
Unit values 4.02 235.00 114.30 0.00 0.00 349.30
Totals 8546.52 \$499,610 \$243,008 \$0 \$0 \$742,618

U15 MECHANICAL 8547 \$499,610 \$243,008 \$0

	=======		=======		========	=======
Line #	Descript	ion				
	Manhours	Matl	Labor	Equipment	Sub	Total
	======					
ESTIMATE TOTAL	8547	\$499,610	\$243,008	\$0	\$0	\$742,618
SALES TAX MATL MARKUP LABOR MARKUP	0.00% 0.00% 0.00%	\$0 \$0	\$0			
EQUIPT MARKUP SUB MARKUP	0.00%		4 -	\$0	\$0	
TOTAL BEFORE C CONTINGENCY BOND PROFIT	ONTINGENC 10.00% 0.00% 10.00%	\$499,610	\$243,008	\$0	\$0	\$742,618 \$74,262 \$0 \$74,262
JOB TOTAL						\$891,142

Estimate: ECO - 3 Date: 15-Dec-94
Description: INSTALL WATER CLOSETS - FAMILY HOUSING
Project: LIMITED EEAP (WTR)Bid Date:
Location: FORT KNOX, KY Job #: 94013.03
Sq. footage: FAM HSG - GP 3 City indx:Louisville, KY

------SIMMARY

	2	OUMMARY				
	Manhours	Matl	Labor	Equipment	Sub	Total
==========				=======================================		========
U15 MECHANICAL	8547	\$499,610	\$243,008	\$0	\$0	\$742,618
TOTAL	8547	\$499,610	\$243,008	\$0	\$0	\$742,618
SALES TAX MATL MARKUP LABOR MARKUP EQUIPT MARKUP	0.00% 0.00% 0.00% 0.00%	\$0 \$0	\$0	\$0		
SUB MARKUP	0.00%			<b>4</b> 0	\$0	
TOTAL BEFORE C CONTINGENCY BOND PROFIT	ONTINGENC 10.00% 0.00% 10.00%	\$499,610	\$243,008	\$0	\$0	\$742,618 \$74,262 \$0 \$74,262
JOB TOTAL						\$891,142

State   Calculation work sheet 1   Date: 50								
STATE   Continue System   Co		CALV	ULATIO	ON WORK SHEET 1			DATE:	5 OCT 94
FAMILY	l l l l l l l l l l l l l l l l l l l	5314 D		FUNCTION:	—· 1•	UNACCO	M PERS	HOUS DET FAC
xisting Fixture System         Retrofited Fixture System         Usage Description         Fixtures         Fixtures           Description         9.5 NO RETROFIT         9.5 125         2           I AERATOR         1.0 NO RETROFIT         9.5 365         1           EN SINK         9.5 NO RETROFIT         9.5 365         1           EN SINK         19 1.6 GPF TANK TYPE TOILET         6.1 14600         1           FYPE         LPF         #FL/YR         1           ENTIAL TYPE         9.5 NO RETROFIT         9.5 245         1           FURY         TEMP         1         1           FURY         334 REDUCE STORAGE TEMP         322 8760         1           FRY: ?         INSTALL INSUL JACKET         322 8760         1		FAMILY		Operating Hours:	ı	24 24	7 087 10	0 1 1 1 1
LPM   Description   LPM   HRS/YR   Quantity     JAERATOR   9.5   NO RETROFIT   9.5   125   2     LPM		xisting Fixture System	-	Retrofited Fixture Syster		Usage	Fixtures	Water Leaks
NO RETROFIT   9.5   125   2   1   1   1   1   1   1   1   1   1	1			1		<b>HRS/YR</b>	Quantity	Eliminated LPY
LPM				IO RETROFIT	9.5	125	2	
EN SINK       UPM       LPM       2         EN SINK       9.5       NO RETROFIT       9.5       365       1         IMARENTAL INSUL JACKET       1       1       1       1       1         IMSTALL INSUL JACKET       322       8760       1       1         IMSTALL INSUL JACKET       322       8760       1       1	Lavatory Sinks							
NO RETROFIT   9.5   365   1	CO1 TOTAL:		M		LPM		2	0
LPF	T		_	IO RETROFIT	9.5	365	-	0
LPF								
The thick type tollet 6.1 14600 1	CO2 TOTAL:		LPF		LPF	#FL/YR		0
ENTIAL TYPE  LPM  LPM  LPM  LPM  LPM  LPM  LPM  L	T		t-	6 GPF TANK TYPF TOILET	6.1	14600	-	
LPK								
ENTIAL TYPE  LPM  LPM  HRS/YR  0  LPM  HRS/YR  0  1  1  TEMP  TEMP	ECO3 TOTAL:		LPF		LPF	#FL/YR		0
ENTIAL TYPE 9.5 NO RETROFIT 9.5 245 1  ENTIAL TYPE 9.5 NO RETROFIT 9.5 245 1  TEMP	4							
ENTIAL TYPE 9.5 NO RETROFIT 9.5 245 1  ENTIAL TYPE 9.5 NO RETROFIT 9.5 245 1  TEMP TEMP TEMP 1  FURY 334 REDUCE STORAGE TEMP 322 8760 1  INSTALL INSUL JACKET 322 8760 1  TEMP	Urinals							
ENTIAL TYPE 9.5 NO RETROFIT 9.5 245 1  TEMP	CO4 TOTAL		PM		Md I	HRS/YR		0
TEMP	T	TYPF	-	IO RETROFIT	9.5	245		55640
TEMP   TEMP   1							•	
- FURY 334 REDUCE STORAGE TEMP 322 8760 1 /ERY: ? INSTALL INSUL JACKET 322 8760 1  1 1 1	CO5 TOTAL:		EMP		TEMP		-	55640
JITY: ? 334 REDUCE STORAGE TEMP 322 8760 1  JERY: ? INSTALL INSUL JACKET 322 8760 1  1 1 1		FURY						
/ERY: ? INSTALL INSUL JACKET 322 8760 1		ITY: ?	1	REDUCE STORAGE TEMP	322	8760	-	
				NSTALL INSUL JACKET	322	8760	1	
	FCOR TOTAL		1				-	C
			-					
Systems Engineering and Management Cornoration Knowville TN	SYSTEMS CORP		Vefor	e Fraincering and Nanager	mont C	ornoration	l .	NT olli

Systems Engineering and Management Corporation, Knoxville, TN

WATER CONSTRATION STUDY 2 OF 2	CULATION WORK SHEET 2	/KL Energy Rate: \$/KWH	WH Demand Rate: \$/KW	rgy Saving WATER Total Total	EC GAS Dollar Saving Dollar Saving Dollars Invested	00.00 \$0.00	\$0.00	\$0.00	00.0\$ \$0.00	\$0.00	\$0.00	\$0.00	00.0\$ 00.00		\$0.00		\$78.16	\$0.00 \$0.00	\$0.00	\$0.00 \$0.00	\$0.00 \$0.00 \$0.00	96 \$23.09 \$1,034.18 \$0.00		00.0\$ \$0.00 \$0.00	96 \$23.09 \$1,034.18 \$0.00		0.89	7.70 \$80.96 \$60.00			
	TION WORK SHEET 2		Demand Rate:		l	╢								\$78.16	\$0.00	\$0.00	\$78.16	\$0.00	\$0.00	\$0.00	\$0.00						0.89	7.70			0000
	$\sim$	0.42 \$/KL	10.51 \$/MWH	Annual Energy	ELEC ELEC KW KWH	┨			0 0				0 0												0 0						
FY94S EEAP FT. KNOX		Water Rate:	Gas Rate:	Annual Water	Saving LPY		0	0	0	0	0	0	0	188,340	0	0	188,340	0	0	0	0	55,640	0	0	55,640	EST ANNUAL	HOT WTR	CONSUMPTION	(LITERS)	43,946	370 67
		FACILITY NO.:		ECO Number	ECO Type		Lavatory Sinks		ECO1 TOTAL:	2	Misc. Sinks		ECO2 TOTAL:	3	Water Closets		ECO3 TOTAL:	4	Urinals		ECO4 TOTAL:	5	Shower Heads		ECO5 TOTAL:	9	Water	Heater	(GAS)		LOCE TOTAL

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S FFAP FT	K	KNOX WAT	NO	TIIDY		10
	CAL	CULAT	X			DATE:	5 OCT 94
FACILITY NO.:	5406 E		FUNCTION:	' 	UNACCON	A PERS	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:	'	1 TPICAL 24	JF 216 U	0
ECO Number	Existing Fixture System		Retrofited Fixture System	L L	Usage	Fixtures	Water Leaks
ECO Type	Description		Description	LPM	<b>HRS/YR</b>	Quantity	Eliminated LPY
1 Lavatory Sinks	SINK W/ AERATOR	9.5	NO RETROFIT	9.5	125	2	
ECO1 TOTAL:		LPM		LPM	100 C	2	0
2 Misc. Sinks	KITCHEN SINK	9.2	NO RETROFIT	9.5	365	1	0
FCO2 TOTAL		<u> </u>		100	#E! ND	Ţ	C
-00 - 10 IVE	ď	-		ב נ		-	
3 Water Closets	TANK TYPE	19	1.6 GPF TANK TYPE TOILET	6.1	7300	2	
FCO3 TOTAL .		_ 		- DC	#E! ND	2	c
A A						,	>
Urinals							
ECO4 TOTAL:		LPM		LPM	HRS/YR:	0	0
2	RESIDENTIAL TYPE	9.5	NO RETROFIT	9.5	245	_	166918 5
Shower Heads						•	
ECO5 TOTAL:		TEMP		TEMP	And Section 1	1	166918.5
	40 GAL A. O. SMITH						
Water	CAPACITY: ?	334	REDUCE STORAGE TEMP	322	8760	_	
Heater (GAS)	RECOVERY: ?		INSTALL INSUL JACKET	322	8760	-	
ECO6 TOTAL:					1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	1	0

# Systems Engineering and Management Corporation, Knoxville, TN

FACILITY NO.   Water Rate:   0.42   S/KL   Energy Rate:   S/KWH   S406 E   Gas Rate:   10.51   S/MWH   Demand Rate:   S/KWH   ECO Number   Annual Water ELEC   ELEC   ELEC   ELEC   ELEC   GAS   ELEC   ELEC   ELEC   GAS   S0.00	CALCULAT   Cas Rate:	CALCULAT			,					
Water Rate:	Water Rate: 0.42 \$/KL	Water Rate: 0.42 \$/KL			Ö	ALCULAT	ION WO	RK SHEET 2		
Gas Rate:         10.51         \$\text{MVMH}\$         Demand Rate:         \$\text{SMVM}\$         \$\text{SMVM}\$         \$\text{SMVM}\$         \$\text{CITTECT}\$         \$\text{SMVM}\$         \$\text{SMVM}\$         \$\text{CITTECT}\$         \$\text{SMVM}\$         \$\text{SMVM}\$         \$\text{Dollar Saving}\$         \$\text{SMVM}\$         \$\text{SMMM}\$         \$\text{Dollar Saving}\$         \$\text{SMMM}\$         \$\text{SMMM}\$         \$\text{Dollar Saving}\$         \$\text{SMMM}\$         \$\text{Dollar Saving}\$         \$\text{SMMM}\$         \$\text{SMMM}\$         \$\text{Dollar Saving}\$         \$\text{SMMM}\$         \$\text{Dollar Saving}\$         \$\text{SMMM}\$         \$\text{SMMM}\$         \$\text{Dollar Saving}\$         \$\text{SMMM}\$         \$\text{SMMM}\$<	Cas Rate: 10.51 \$/MWH	Saving LPY KW KWH CANNUAL ELEC ELEC ELEC ELEC ELEC ELEC ELEC EL	FACILITY NO.: 5406 E	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
er         Annual Water         Annual Energy Saving         WATER         Total           ks         Caxing LPY         KWH         MWH         Dollar Saving         Dollar Saving           ks         0         0         0         \$0.00         \$0.00           s         0         0         0         \$0.00         \$0.00           s         0         0         0         \$0.00         \$0.00           s         0         0         \$0.00         \$0.00         \$0.00           s         0         0         \$0.00         \$0.00         \$0.00         \$0.00           s         0         0         \$0.00 <td>er Annual Water</td> <td>  Saving LPY KW KWH                                      </td> <td>ļ</td> <td>Gas Rate:</td> <td>10.51</td> <td>#WM/\$</td> <td></td> <td>Demand Rate:</td> <td></td> <td>\$/KW</td>	er Annual Water	Saving LPY KW KWH	ļ	Gas Rate:	10.51	#WM/\$		Demand Rate:		\$/KW
Saving LPY   KWH   MWH   Dollar Saving   Dollar Saving   NWH   MWH   MWH   Dollar Saving   Dollar Saving   Saving   NWH   MWH   Dollar Saving   So:00   So:0	Saving LPY KW KWH KWH     Note	Saving LPY KW KWH    0	ECO Number	Annual Water	Annua	Energy	Saving	WATER	Total	Total
New York   Construction   Construc	KS   0   0   0   0   0   0   0   0   0	Ke   0   0   0   0   0   0   0   0   0	TO Type		ELEC	ELEC	GAS	Dollar Saving	Dollar Saving	Dollare Invested
NFS   0   0   \$0.00   \$0.00	ks	Nes	1	1			0	\$0.00	\$0.00	\$0.00
0         0         \$0.00         \$0.00           s         \$0.00         \$0.00         \$0.00           s         \$0.00         \$0.00         \$0.00           s         \$0.00         \$0.00         \$0.00           sts         0         \$0.00         \$0.00           sto.00         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           sto.00         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           ds         0         \$0.00         \$0.00           sto.00         \$0.00         \$0.00         \$0.00           sto.00         \$0.00         \$0.00         \$0.00           sto.00         \$0.00         \$0.00         \$0.00           sto.00         \$0.00         \$0.00           sto.00 <td>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>Lavatory Sinks</td> <td>0</td> <td></td> <td></td> <td>0</td> <td>\$0.00</td> <td>\$0.00</td> <td>\$0.00</td>	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
s         0         0         \$0.00         \$0.00           s         0         \$0.00         \$0.00         \$0.00           s         0         \$0.00         \$0.00         \$0.00           s         0         0         \$0.00         \$0.00           s         0         0         \$0.00         \$0.00           s         0         \$0.00         \$0.00         \$0.00           s         0         \$0.00         \$0.00         \$0.00           d         \$0.00         \$0.00         \$0.00         \$0.00           EST ANUAL         \$0.89         \$69.27         \$3,102.50           HOT WIR         0.89         \$69.27         \$3,402.50           CONSUMPTION         7.70         \$80.96           (LITERS)         7.70         \$80.96           43,946         9         \$0.00         \$90.33	s 0 0 0 0  s 0 0 0 0  188,340 0 0 0  188,340 0 0  188,340 0 0  0 0 0 0  166,919 0 0  166,919 0 0  EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 0 0  \$\$\$43,946 0 0	s 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0			0	\$0.00	\$0.00	\$0.00
s         0         \$0.00         \$0.00           s         0         \$0.00         \$0.00           following         \$0.00         \$0.00         \$0.00           fts         0         \$0.00         \$0.00           fts         \$0.00         \$0.00         \$0.00	s 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	s 0 0 0 0 0 0 188,340 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
s         0         \$0.00         \$0.00           to         0         \$0.00         \$0.00           tes         0         0         \$0.00         \$0.00           tes         0         0         \$0.00         \$0.00           tes         0         \$0.00         \$0.00         \$0.00           tes         \$0.00         \$0.00         \$0.00         \$0.00           tes<	s 0 0 0 0 0 0 188,340 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	s 0 0 0 0 0 0 188,340 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2	0			0	\$0.00	\$0.00	\$0.00
0         0         \$0.00         \$0.00           4         5         50.00         \$0.00           4         5         5         5         6           4         6         0         \$0.00         \$0.00         \$0.00           4         6         8         6         \$0.00         \$0.00         \$0.00           4         6         9         8         6         \$0.00         \$0.00         \$0.00           4         3         4         3         4         3         4         3         4         3         1         4         3         1         3         1         3         1         3         1         3         1         3         1         3         3         1         3         3         1         3         3         1         3	0	0 0 0 0 188,340 0 0 0 188,340 0 0 188,340 0 0 0 0 0 0 0 166,919 0 0 166,919 0 0 166,919 0 0 156,919 0 0 166,919 0 0 166,919 0 0 166,919 0 0 166,919 0 0 166,919 0 0 166,919 0 0 166,919 0 0 168,919 0 0 168,919 0 0 168,919 0 0 168,919 0 0 168,919 0 0	Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
tfs         0         0         \$0.00         \$0.00           tfs         0         \$0.00         \$0.00         \$0.00           tfs         0         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00         \$0.00           ds         0         \$0.00         \$0.00         \$0.00           4         \$0         \$0         \$0.00         \$0.00           4         \$0         \$0         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00         \$0.00           \$0         \$0         \$0         \$0.00         \$0.00	ts 0 0 0 0 0 188,340 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ts 0 0 0 0 0 188,340 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0			0	\$0.00	\$0.00	\$0.00
its         188,340         \$78.16         \$78.16           its         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           4s         0         \$0.00         \$0.00           4s         0         \$0.00         \$0.00           5D         \$0.00         \$0.00           4s         \$0         \$0.00         \$0.00           4s         \$0         \$0.00         \$0.00           43,946         \$0         \$0         \$0.00           43,946         \$0         \$0.00         \$0.00	ts 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ts 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
tfs         0         \$0.00         \$0.00           188,340         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           0         \$0.00         \$0.00         \$0.00           4         \$0         \$0.00         \$0.00           4         \$0         \$0         \$0.00           43,946         \$0         \$0         \$0.00           \$0         \$0         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00           \$0         \$0         \$0.00         \$0.00           \$0	tts 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	188,340 0 188,340 0 0 0 0 166,919 0 166,919 0 EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 0 0 43,946 0 0 5 CORP	3	188,340				\$78.16	\$78.16	\$838.80
0         \$0.00         \$0.00           188,340         \$78.16         \$78.16           0         \$0.00         \$0.00           0         \$0.00         \$0.00           166,919         \$0         \$0.00           4s         0         \$0.00           166,919         0         \$0.00           166,919         0         \$0.00           166,919         0         \$0.00           EST ANNUAL         0         \$0.00           HOT WTR         0.89         \$69.27         \$3,102.50           CONSUMPTION         7.70         \$80.00           (LITERS)         7.70         \$80.96           43,946         0         9         \$0.00           43,946         0         9         \$0.00	0 0 0 0 0 166,919 ds 0 0 166,919 0 0 166,919 0 0 EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 43,946 0 0	0 0 0 0 0 166,919 ds 0 166,919 0 166,919 0 0 166,919 0 0 166,919 10 0 10 10 10 10 10 10 10 10 10 10 10 1	Water Closets	0				\$0.00	\$0.00	\$0.00
188,340         \$ 578.16         \$ 78.16           0         \$ 0.00         \$ 0.00           0         \$ 0.00         \$ 0.00           166,919         \$ 0         \$ 0.00           4s,946         0         \$ 0.00           166,919         0         \$ 0.00           166,919         0         \$ 0.00           166,919         0         \$ 0.00           166,919         0         \$ 0.00           166,919         0         \$ 0.00           166,919         0         \$ 0.00           166,919         0         \$ 0.00           166,919         0         \$ 0.00           166,919         0         \$ 0.00           166,919         0         \$ 0.00           166,919         0         \$ 0.00           166,919         0         \$ 0.00           166,919         0         \$ 0.00           166,919         0         \$ 0.00           166,919         0         \$ 0.00           166,919         0         0           166,919         0         0           166,919         0         0           166,919         0 <td>188,340 0 0 0 166,919 ds 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 17,000 HOT WTR HOT WTR CONSUMPTION (LITERS) 43,946 6 6 6 6 7 8 18,946 18,946 18,946 19,000 19</td> <td>188,340 0 0 0 166,919 ds 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 17,000 18,346 43,946 43,946 18,3946 19,000 19,0</td> <td></td> <td>0</td> <td></td> <td></td> <td></td> <td>\$0.00</td> <td>\$0.00</td> <td>\$0.00</td>	188,340 0 0 0 166,919 ds 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 17,000 HOT WTR HOT WTR CONSUMPTION (LITERS) 43,946 6 6 6 6 7 8 18,946 18,946 18,946 19,000 19	188,340 0 0 0 166,919 ds 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 17,000 18,346 43,946 43,946 18,3946 19,000 19,0		0				\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.00           0         \$0.00         \$0.00           166,919         \$0.00         \$0.00           4cs         0         \$0.00         \$0.00           166,919         0         \$0.00         \$0.00           166,919         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00           HOT WTR         0.89         \$69.27         \$3,102.50           CONSUMPTION         7.70         \$3,102.50           43,946         0         9         \$0.00         \$90.33	0 0 166,919 166,919 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 1 166,	0 0 166,919 0 0 166,919 0 166,919 0 166,919 0 166,919 0 166,919 17 166,919 18 17 18 18 18 18 18 18 18 18 18 18 18 18 18	ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$838.80
0         \$0.00         \$0.00           0         \$0.00         \$0.00           166,919         289         \$69.27         \$0.00           166,919         0         0         \$0.00         \$0.00           166,919         0         0         \$0.00         \$0.00           EST ANNUAL         0         \$0.00         \$0.00         \$0.00           HOT WTR         0.89         \$69.27         \$3,102.50         \$0.00           CONSUMPTION         7.70         \$80.96         \$0.37         \$0.34           43,946         0         9         \$0.00         \$90.33	0 0 166,919 0 0 1 166,919 1 166,919 1 CONSUMPTION CONSUMPTION CONSUMPTION 43,946 1 43,946 2 CORP	0 0 0 166,919 0 0 1 166,919 0 0 EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 1 0 0	4	0				\$0.00	\$0.00	\$0.00
0         \$0.00         \$0.	0 166,919 166,919 166,919 166,919 166,919 166,919 166,919 1000 CONSUMPTION (LITERS) 43,946 1000	0 166,919 166,919 166,919 EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 3,946 43,946 6	Urinals	0				\$0.00	\$0.00	\$0.00
:         0         \$0.00 </td <td>166,919 14s 0 0 166,919 0 EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 1 43,946 2 CORP</td> <td>166,919 14s 0 0 166,919 0 EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 6 43,946 7 CORP</td> <td></td> <td>0</td> <td></td> <td></td> <td></td> <td>\$0.00</td> <td>\$0.00</td> <td>\$0.00</td>	166,919 14s 0 0 166,919 0 EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 1 43,946 2 CORP	166,919 14s 0 0 166,919 0 EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 6 43,946 7 CORP		0				\$0.00	\$0.00	\$0.00
ids         166,919         \$69.27         \$3,102.50           ids         0         \$0.00         \$0.00           :         166,919         0         \$0.00         \$0.00           :         166,919         0         289         \$69.27         \$3,102.50           :         Tolk         0         \$0.00         \$0.00           EST ANNUAL         0         0         \$69.27         \$3,102.50           HOT WTR         0.89         \$69.37         \$80.96           CONSUMPTION         7.70         \$80.96         \$43,946           (LITERS)         43,946         0         9         \$0.00         \$90.33	166,919 0 0 1 166,919 0 0 EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 EST ANNUAL A3,946 A3,946 A3,946 B3,946 A3,946	166,919 0 0 0 166,919 0 EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 1 43,946  S CORP	ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
4ds         0         \$0.00	ads 0 0 0 0 EST 400 0 HOT WTR CONSUMPTION (LITERS) 43,946 0 0	ids 0 0 0 0 0 EST 4NUAL HOT WTR CONSUMPTION (LITERS) 43,946 0 0	5	166,919			289	\$69.27	\$3,102.50	\$0.00
0         \$0.00         \$0.00         \$0.00           EST ANNUAL         0.89         \$69.27         \$3,102.50           HOT WTR         0.89         \$9.37           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946         9         \$0.00         \$90.33	166,919 0 0 EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 643,946 75 CORP	166,919 0 0 EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 0 0	Shower Heads	0			0	\$0.00	\$0.00	\$0.00
:         166,919         0         0         289         \$69.27         \$3,102.50           EST ANNUAL         0.89         \$9.37           HOT WTR         0.89         \$9.37           CONSUMPTION         7.70         \$80.96           (LITERS)         43,946         0         9           *50.00         \$90.33	166,919	: 166,919 0 0 EST ANNUAL HOT WTR CONSUMPTION (LITERS) 43,946 0 0 S CORP		0			0	\$0.00	\$0.00	\$0.00
EST ANNUAL       0.89       \$9.37         HOT WTR       0.89       \$9.37         CONSUMPTION       7.70       \$80.96         (LITERS)       43,946       0       9       \$0.00       \$90.33	ANNUAL  T WTR  SUMPTION  ITERS)  3,946  0  0	ANNUAL  OT WTR SUMPTION ITERS) 3,946 0 0	ECO5 TOTAL:	166,919	0	0	289	\$69.27	\$3,102.50	\$0.00
HOLIWIR 0.89 \$9.37 CONSUMPTION 7.70 \$80.96 (LITERS) \$43,946 0 0 9 \$0.00 \$90.33	3,946 0 0	3,946 0 0	9	EST ANNUAL						
CONSUMPTION         7.70         \$80.96           (LITERS)         43,946         0         9         \$0.00         \$90.33	3,946 0 0	3,946 0 0	Water	HOI WIR			0.89		\$9.37	
(LITERS) 43,946 0 0 9 \$0.00 \$90.33	3,946 0 0	3,946 0 0	Heater	CONSUMPTION			7.70		\$80.96	\$60.00
43,946 0 9 \$0.00 \$90.33	3,946 0 0	3,946 0 0	(GAS)	(LITERS)						
43,946 0 0 9 \$0.00 \$90.33	3,946 0 0	3,946 0 0		43,946						
			ECO6 TOTAL:	43,946	0	0	6	\$0.00	\$90.33	\$60.00

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT	- KN	. KNOX WAT CONSERVATION STUDY	S NOI	TUDY		10
	CALC	ULAT	노			DATE:	5 OCT 94
FACILITY NO. :	5475 D		FUNCTION:	1-	UNACCOM PERS HOUS	A PERS	HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:	!	24 24	5 667 10	0
ECO Number	Existing Fixture System		Retrofited Fixture System	ш	Usage	Fixtures	Water Leaks
ECO Type	Description	LPM	Description	LPM	<b>HRS/YR</b>	Quantity	Eliminated LPY
1 Lavatory Sinks		_	NO RETROFIT	9.5	125	2	
				-		C	c
ECO1 IOIAL:				L F		7	0
2 Misc. Sinks	KITCHEN SINK	9.5	NO RETROFIT	9.5	365	~	0
ECO2 TOTAL:		LPF		LPF	#FL/YR	1	0
Mater Clanate	TANK TYPE		1.6 GPF TANK TYPE TOILET	6.1	7300	2	
Water Closets							
ECO3 TOTAL:		LPF		LPF	#FL/YR	2	0
4 Hripole							
Officials							
ECO4 TOTAL:		LPM		LPM	HRS/YR	0	0
5 Shower Heads	RESIDENTIAL TYPE	9.5	NO RETROFIT	9.5	245	1	0
ECO5 TOTAL:		TEMP		TEMP		-	0
9	40 GAL A. O. SMITH						
Water	10.1	334	REDUCE STORAGE TEMP	322	8760	1	
Heater (GAS)	RECOVERY: ?		INSTALL INSUL JACKET	322	8760	~	
ECO6 TOTAL:				*		7	0

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT. KNOX	T. KNO	X WATE	WATER CON	RVATION STUDY	TUDY	2 OF 2
- E		S	I_CULAT	IOM NOI	CALCULATION WORK SHEET 2		
	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
_	Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
-	Annual Water	Annual	Energy 8	Saving	WATER	Total	Total
	Saving LPY	ELEC KW	ELEC KWH	GAS MWH	Dollar Saving	Dollar Saving	Dollars Invested
·	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
-	0			0	\$0.00	\$0.00	\$0.00
	0	0	0	0	\$0.00	\$0.00	\$0.00
_	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
7	0			0	\$0.00	\$0.00	\$0.00
	0	0	0	0	\$0.00	\$0.00	\$0.00
	188,340				\$78.16	\$78.16	\$838.80
	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
	188,340				\$78.16	\$78.16	\$838.80
	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
i	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
	0	0	0	0	\$0.00	\$0.00	\$0.00
	EST ANNUAL						
	HOT WTR			0.89		\$9.37	
	CONSUMPTION			7.70		\$80.96	\$60.00
1	(LITERS)						
	43,946						
	43,946	0	0	6	\$0.00	\$90.33	\$60.00

Systems Engineering and Management Corporation, Knoxville, TN

Color   Colo		FY94S EEAP FT		. KNOX WAT CONSERVATION STUDY	ION S	TUDY		1 (
PACILITY NO.		CAI	-CULAT	ION WORK SHEET 1			DATE:	5 OCT 94
CCCU Number   Existing Fixure System   Retrofited Fixure System   LPM   LPM	FACILITY NO. :	5568 B	ı	FUNCTION:	'	UNACCON	A PERS	_
ECO Number         Existing Fixture System         Retrofited Fixture System         Usage Description         Fixtures           ECO Type         Description         1.PM         HRS/PR Quantity           1 Lavatory Sinks         ILPM         HRS/PR Quantity           ECOT TOTAL:         LPM         LPM         LPM           ECOT TOTAL:         KITCHEN SINK         9.5 NO RETROFIT         9.5 365         1           Misc. Sinks         Misc. Sinks         LPM         RELVR         1           ECO2 TOTAL:         KITCHEN SINK         9.5 NO RETROFIT         9.5 365         1           Water Closets         19 1.6 GPF TANK TYPE TOILET         6.1 7300         2           Water Closets         19 1.6 GPF TANK TYPE TOILET         6.1 7300         2           CO4 TOTAL:         LPM         REJUKE         1           ECO4 TOTAL:         LPM         RESIDENTIAL TYPE         5.68 NO RETROFIT         5.68 Z45         1           ECO5 TOTAL:         CAPACITY:         TEMP         TEMP         TEMP         1           FEXAL         GAB         AGAL STATE         INSTALL INSUL JACKET         322         8760         1           Heater         RECOS TOTAL:         CAPACITY:         INSTALL INSUL JACKET	Occupancy:	- 11	ı	Operating Hours:	·	1 Y PICAL 24	JF 188 (	SINC
ECO Type         Description         LPM         Description         LPM         HRS/YR         Quantity           Lavator 1 Sinks         BINK W/A AERATOR         9.5         NO RETROFIT         9.5         125         2           ECO1 TOTAL:         LPM         9.5         NO RETROFIT         9.5         365         1           ECO2 TOTAL:         LPF         19         LAPR         10         1.6 GPF TANK TYPE TOILET         6.7         7300         2           ECO3 TOTAL:         A         19         1.6 GPF TANK TYPE TOILET         6.7         7300         2           ECO3 TOTAL:         LPF         ECO4 TOTAL:         LPF         HELLYR         2           ECO4 TOTAL:         LPM         NO RETROFIT         LPM         HRS/YR         2           Shower Heads         ECO5 TOTAL:         TEMP         TEMP         1         1           ECO5 TOTAL:         GAS         A GAL STATE         TEMP         TEMP         1         1           Water         GAS)         GAS)         INSTALL INSUL JACKET         322         8760         1           ECO5 TOTAL:         RECOVERY: ?         INSTALL INSUL JACKET         322         8760         1 <t< td=""><td>ECO Number</td><td>Existing Fixture Syster</td><td>E</td><td>Retrofited Fixture Syste</td><td>E</td><td>Usage</td><td>Fixtures</td><td>Water Leaks</td></t<>	ECO Number	Existing Fixture Syster	E	Retrofited Fixture Syste	E	Usage	Fixtures	Water Leaks
Taylory Sinks	ECO Type	Description		Description		HRS/YR	Quantity	Eliminated LPY
Lavatory Sinks	_	SINK W	9.5	NO RETROFIT	9.5	125	2	
ECOT TOTAL:	Lavatory Sinks							
Misc. Sinks   9.5   NO RETROFIT   9.5   365   1	FCO1 TOTAL		DM -	***************************************	MG		,	
Misc. Sinks         LPF         HELLYR         1           ECQ2 TOTAL:         3         TANK TYPE         19         1.6 GPF TANK TYPE TOILET         6.1         7300         2           Water Closets         ECQ3 TOTAL:         LPF         #FL/YR         2           ECQ3 TOTAL:         LPM         HRS/YR         2           Uninals         ECQ4 TOTAL:         LPM         HRS/YR         0           ECQ4 TOTAL:         LPM         HRS/YR         0           Shower Heads         ECO5 TOTAL:         LPM         HRS/YR         0           ECO5 TOTAL:         TEMP         TEMP         1           ECO5 TOTAL:         TEMP         TEMP         1           Water         CAPACITY: 33,500 BTU/H         334 REDUCE STORAGE TEMP         322 8760         1           Water         CAPACITY: 33,500 BTU/H         334 REDUCE STORAGE TEMP         322 8760         1           (GAS)         GAS         ECO6 TOTAL:         1         1	2	KITCHEN SINK	0.5	NO RETROEIT	20		1	
CCO2 TOTAL:	Misc. Sinks		2		2	8	-	>
3         TANK TYPE         19         1.6 GPF TANK TYPE TOILET         6.1         7300         2           ECO3 TOTAL:         LPF         LPF         #FLYPR         2           CC04 TOTAL:         LPM         HRS/YR         0           ECO4 TOTAL:         LPM         HRS/YR         0           Shower Heads         ECO5 TOTAL:         TEMP         75.68         NO RETROFIT         5.68         245         1           ECO5 TOTAL:         GAPACITY:         33,500 BTU/H         334         REDUCE STORAGE TEMP         322         8760         1           Heater         RECOVERY:         7         INSTALL INSUL JACKET         322         8760         1           GAS)         RECO6 TOTAL:         RECOVERY:         7         INSTALL INSUL JACKET         322         8760         1           ECO6 TOTAL:         RECOVERY:         7         INSTALL INSUL JACKET         322         8760         1           ECO6 TOTAL:         RECOVERY:         7         RECOF TOTAL:         1         1           ECO6 TOTAL:         RECOF TOTAL:	ECO2 TOTAL:		LPF		LPF	#FL/YR	1	0
Water Closets         LPF         LPF         #FLVR®         2           ECO3 TOTAL:         4         LPM         LPM         HRS/YR         0           Urinals         ECO4 TOTAL:         LPM         HRS/YR         0           5         RESIDENTIAL TYPE         5.68         NO RETROFIT         5.68         245         1           Shower Heads         Shower Heads         TEMP         1         1         1           ECO5 TOTAL:         TEMP         TEMP         1         1           Water         CAPACITY: 33,500 BTU/H         334 REDUCE STORAGE TEMP         322 8760         1           Heater         RECOVERY: ?         INSTALL INSUL JACKET         322 8760         1           (GAS)         (GAS)         1         1           ECO6 TOTAL:         Systems Engineering and Management Corporation, Knoxville, TN	3	TANK TYPE	19	1.6 GPF TANK TYPF TOIL FT	6 1	7300	2	
COO TOTAL:   LPF	Water Closets				5		1	
A	FCO3 TOTAL		1d		1 DE	#FI WR	2	c
Urinals         LPM         LPM         HRS/YR         0           ECO4 TOTAL:         5.68         NO RETROFIT         5.68         245         1           Shower Heads         Shower Heads         TEMP         1         1           ECO5 TOTAL:         TEMP         TEMP         1         1           ECO5 TOTAL:         Auter         CAPACITY: 33,500 BTU/H         334         REDUCE STORAGE TEMP         322         8760         1           Heater         RECOVERY: ?         INSTALL INSUL JACKET         322         8760         1           ECO6 TOTAL:         GAS)         INSTALL INSUL JACKET         322         8760         1           ECO6 TOTAL:         Systems Engineering and Management Corporation, Knoxville, TN	4							
ECO4 TOTAL:         LPM         LPM         HRS/YR:         0           5 Shower Heads         Shower Heads         5.68         245         1           ECO5 TOTAL:         TEMP         TEMP         1         1           ECO5 TOTAL:         TEMP         TEMP         1         1           Water         CAPACITY: 33,500 BTU/H         334 REDUCE STORAGE TEMP         322 8760         1           Heater         RECOVERY: ?         INSTALL INSUL JACKET         322 8760         1           GAS)         ECO6 TOTAL:         1         1           SYSTEMS CORP         Systems Engineering and Management Corporation, Knoxville, TN	Urinals							
Shower Heads	FCOA TOTAL		MQ		I DM	HDC/VD	c	c
Shower Heads         Shower Heads         NO KETROFII         5.68         245         1           ECO5 TOTAL:         TEMP         TEMP         TEMP         1           ECO5 TOTAL:         Auter         CAPACITY:         33,500 BTU/H         334 REDUCE STORAGE TEMP         322 8760         1           Heater         RECOVERY:         PRECOVERY:         NSTALL INSUL JACKET         322 8760         1           (GAS)         ECO6 TOTAL:         Systems Engineering and Management Corporation, Knoxville, TN	10141017					NI SVIII	<b>)</b>	٥
ECOS TOTAL:         TEMP         TEMP         1           6         40 GAL STATE         1         1           Water         CAPACITY: 33,500 BTU/H         334 REDUCE STORAGE TEMP         322 8760         1           Heater         RECOVERY: ?         INSTALL INSUL JACKET         322 8760         1           (GAS)         ECO6 TOTAL:         1         1           ECO6 TOTAL:         Systems Engineering and Management Corporation, Knoxville, TN	Shower Heads	1	2.68	NO REIROFII	2.68	245	-	0
6         40 GAL STATE         REDUCE STORAGE TEMP         322         8760         1           Water         CAPACITY: 33,500 BTU/H         334         REDUCE STORAGE TEMP         322         8760         1           Heater         RECOVERY: ?         INSTALL INSUL JACKET         322         8760         1           (GAS)         ECO6 TOTAL:         Instance of the control of the cont			TEMP		TEMP	75.74 13.45 13.75	4-	0
WaterCAPACITY: 33,500 BTU/H334 REDUCE STORAGE TEMP322 87601HeaterRECOVERY: ?INSTALL INSUL JACKET322 87601(GAS)ECO6 TOTAL:1 Systems Engineering and Management Corporation, Knoxville, TN	9							
Heater       RECOVERY: ?       INSTALL INSUL JACKET       322       8760       1         (GAS)       ECO6 TOTAL:       Analysis of the strength of the	Water		334	REDUCE STORAGE TEMP	322	8760	-	
ECO6 TOTAL:  Systems Engineering and Management Corporation, Knoxville, TN	Heater			INSTALL INSUL JACKET	322	8760	1	
ECO6 TOTAL:       1         Systems Engineering and Management Corporation, Knoxville, TN	(645)							
Systems Engineering and Management Corporation, Knoxville, TN	ECO6 TOTAL:				142		-	0
SYSTEMS CORP	4							
	•	CORP	Svster	ns Engineering and Manager	nent C	orporation	Knoxv	ille TN
								, ()

Systems Engineering and Management Corporation, Knoxville, TN

	<b>FY94S EEAP FT. KNOX</b>	FT. KNC		WATER CON	RVATION STUDY	TUDY	2 OF 2
		Ċ	CALCULA	TION WO	뇡		
FACILITY NO.:	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
Q 000000000000000000000000000000000000	Gas Rate:	10.51	#WW/\$		Demand Rate:		\$/KW
ECO Number	Annual Water	Annual	l Energy	Saving	WATER	Total	Total
ECO Type	Saving LPY	ELEC KW	ELEC KWH	GAS MWH	Dollar Saving	Dollar Saving	Dollars Invested
-	0			0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
3	188,340				\$78.16	\$78.16	\$838.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$838.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
5	0			0	\$0.00	\$0.00	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
9	EST ANNUAL						
Water	HOT WTR			0.89		\$9.37	
Heater	CONSUMPTION			7.70		\$80.96	\$60.00
(GAS)	(LITERS)						
	43,946						
ECO6 TOTAL:	43,946	0	0	6	\$0.00	\$90.33	\$60.00
SYSTEMS C	CORP			Systems	: Engineering and	Management Cor	Systems Engineering and Management Corporation, Knoxville, TN

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT. KNOX WAT	KNC	OX WAT CONSERVATION STUDY	SNO	TUDY		10
	CALCI	ULAT	ξ			DATE:	5 OCT 94
FACILITY NO. :	5661 A		FUNCTION:	— <sub> </sub> ,	UNACCOM PERS HOUS	A PERS	HOUS DET FAC
Occupancy:	FAMILY (3BR)		Operating Hours:	ľ	24	5	)
ECO Number	Existing Fixture System	1 1	Retrofited Fixture System	٤	Usage	Fixtures	Water Leaks
ECO Type	Description	LPM	Description	LPM 9.5	HRS/YR	Quantity 2	Eliminated LPY
Lavatory Sinks					1		
ECO1 TOTAL:		LPM		LPM	教育を	2	0
2	KITCHEN SINK	-	NO RETROFIT	13.2	365	τ-	0
Misc. Sinks							
ECO2 TOTAL:		LPF		LPF	#FL/YR		0
3	TANK TYPE	-	1.6 GPF TANK TYPE TOILET	6.1	7300	2	
Water Closets							
FCO3 TOTAL .		I PF		LPF	#FL/YR	2	0
4							
Urinals							
FCO4 TOTAL		LPM		LPM	HRS/YR	0	0
5	RESIDENTIAL TYPE		NO RETROFIT	9.5	245	-	0
Shower Heads							
ECO5 TOTAL:		TEMP		TEMP		1	0
9		7.00		000	0000	_	
Water	·	334	REDUCE STORAGE LEMP	322	8/60	-	
Heater (GAS)	RECOVERY: ?		INSTALL INSUL JACKET	322	8/60	-	
ECO6 TOTAL:						1	0

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP F	FT. KNOX		WATER CON	RVATION STUDY	TUDY	2 OF 2
		Ö	<b>LCULAT</b>	OM NOI	CALCULATION WORK SHEET 2		
FACILITY NO. :	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
<b>C</b>	Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
ECO Number	Annual Water	Annual	Annual Energy 8	Saving	WATER	Total	Total
ECO Type	Saving LPY	ELEC KW	ELEC KWH	GAS	Dollar Saving	Dollar Saving	Dollars Invested
ļ	1			0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	00'0\$
Misc. Sinks	0			0	\$0.00	\$0.00	00'0\$
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
3	188,340				\$78.16	\$78.16	\$838.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$838.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	\$0.00	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
9	EST ANNUAL						
Water	HOT WTR			0.89		\$9.37	
Heater	CONSUMPTION			7.70		\$80.96	\$60.00
(GAS)	(LITERS)						
	43,946						
ECO6 TOTAL:	43,946	0	0	6	\$0.00	\$90.33	\$60.00

SYSTEMS CORP

Systems Engineering and Management Corporation, Knoxville, TN

	FY94S EEAP FT	Ι.	KNOX WAT CONSERVATION STUDY	S NO	TUDY		1
	CALCI		×			DATE:	5 OCT 94
FACILITY NO. :	5672 A		FUNCTION:	<b> </b> -	UNACCOM PERS HOUS	M PERS	HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:	1	24 24	<u>.</u>	0
ECO Number	Existing Fixture System		Retrofited Fixture System	lu u	Usage	Fixtures	Water Leaks
ECO Type	Description	LPM	Description	LPM	<b>HRS/YR</b>	Quantity	Eliminated LPY
1 Lavatorv Sinks	SINK W/ AERATOR	9.5	NO RETROFIT	9.5	125	-	
ECO1 TOTAL:		LPM		LPM		-	0
2 Misc. Sinks	KITCHEN SINK	9.5	NO RETROFIT	9.5	365	~	0
ECOS TOTAL		100		100	20×10#	•	
ECUZ IDIAL.				L	Z 1 1 L #	-	O
3 Water Closets	TANK TYPE	19	1.6 GPF TANK TYPE TOILET	6.1	14600	-	
ECO3 TOTAL .		1 00	可要10分子。 2007年,1000年,1000年,1000年,1000年,1000年,1000年,1000年,1000年,1000年,1000年,1000年,1000年,1000年,1000年,1000年,1000年,1000年,100	100	#EI ND	-	C
7 10 1 7 1						-	
Urinals							
ECOA TOTAL .		DMG -	第二条 · 等 · 表 · 表 · 一	. DM	HPC/VD		C
5	RESIDENTIAL TYPE	9 5	NO RETROFIT	9.5	245		0
Shower Heads		2			1	-	
					The second secon		
ECOS IOTAL:		I I I I		I EMP		-	Ü
9	40 GAL RHEEM IMPERIAL						
Water	CAPACITY: ?	334	REDUCE STORAGE TEMP	322	8760	_	
Heater	RECOVERY: ?		INSTALL INSUL JACKET	322	8760	1	
(GAS)							
FCOR TOTAL .			・1000 年間の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の	#".	The state of the s	-	C
LCOS IOIAE.					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-	O

Systems Engineering and Management Corporation, Knoxville, TN

Systems Engineering and Management Corporation, Knoxville, TN

\$60.00

\$90.33

\$0.00

6

0

0

ECO6 TOTAL:

\$60.00

\$9.37

0.89

CONSUMPTION

(LITERS) 43,946 43,946

**EST ANNUAL** HOT WTR

Water Heater (GAS)

	FY94S FEAD FT	T KN	YON WAT	NO	TIINY		16
	CAL	CULAT	X		200	DATE:	5 OCT 94
FACILITY NO. :	9053 B		FUNCTION:	,	UNACCO	M PERS	UNACCOM PERS HOUS DET FAC
Occupancy:	FAMILY		Operating Hours:	,	1 Y PICAL 24	24 24	0
ECO Number	Existing Fixture System	1	Retrofited Fixture System		Usage	Fixtures	Water Leaks
ECO Type	Description	LPM	Description	LPM	HRS/YR	Quantity	Eliminated LPY
-	SINK W/ AERATOR	9.5	NO RETROFIT	9.5	125	2	
Lavatory Sinks							
ECO1 TOTAL		Md		₽ D		C	c
2	KITCHEN SINK	5 6	NO RETROFIT	9.5	365	-	c
Misc. Sinks							
ECO2 TOTAL:		LPF	The second secon	LPF	#FL/YR	-	0
က	TANK TYPE	19	<b>1.6 GPF TANK TYPE TOILET</b>	6.1	7300	.2	
Water Closets							
ECO3 TOTAL:		LPF		LPF	#FL/YR	2	0
4							
Urinals							
ECOA TOTAL .		1 DAA		MO			
LCC+ 101AL.	77,77			I L	אוופטנו		0
Shower Heads	KESIDEN I AL I YPE	G.9	NO KE I KOFII	9.5	245	-	55640
ECO5 TOTAL:		TEMP	一、一、一、一、一、一、一、一、一、一、一、一、一、一、一、一、一、一、一、	TEMP	調整に	-	55640
9	40 GAL RUUD #P40-7						
Water	CAPACITY: ?	345	REDUCE STORAGE TEMP	322	8760	_	
Heater	RECOVERY: ?		INSTALL INSUL JACKET	322	8760	-	
(GAS)							
ECO6 IOIAL:			A Track and with Man Andrews Common	TO THE	を記れていた。	1	0

Systems Engineering and Management Corporation, Knoxville, TN

	EY94S FEAP ET KNOX	T- KNO		WATER CON	RVATION STIIDY	TUDY	2 OF 2
		Ö	CALCULAT	TION WO	꽃		
FACILITY NO.:	Water Rate:	0.42	\$/KL		Energy Rate:		\$/KWH
	Gas Rate:	10.51	\$/MWH		Demand Rate:		\$/KW
ECO Number	Annual Water	Annual	ш	Saving	WATER	Total	Total
ECO Type	Saving LPY	ELEC KW	ELEC KWH	GAS	Dollar Saving	Dollar Saving	Dollars Invested
1	0			0	\$0.00	\$0.00	\$0.00
Lavatory Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO1 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
2	0			0	\$0.00	00.0\$	\$0.00
Misc. Sinks	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO2 TOTAL:	0	0	0	0	\$0.00	\$0.00	\$0.00
3	188,340				\$78.16	\$78.16	\$838.80
Water Closets	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO3 TOTAL:	188,340				\$78.16	\$78.16	\$838.80
4	0				\$0.00	\$0.00	\$0.00
Urinals	0				\$0.00	\$0.00	\$0.00
	0				\$0.00	\$0.00	\$0.00
ECO4 TOTAL:	0				\$0.00	\$0.00	\$0.00
2	55,640			96	\$23.09	\$1,034.18	\$0.00
Shower Heads	0			0	\$0.00	\$0.00	\$0.00
	0			0	\$0.00	\$0.00	\$0.00
ECO5 TOTAL:	55,640	0	0	96	\$23.09	\$1,034.18	\$0.00
9	EST ANNUAL						
Water	HOT WTR			1.75		\$18.35	
Heater	CONSUMPTION			7.70		\$80.96	\$60.00
(GAS)	(LITERS)						
	43,946						
ECO6 TOTAL:	43,946	0	0	6	\$0.00	\$99.31	\$60.00
SYSTEMS CORP	ORP			Systems	s Engineering and	Systems Engineering and Management Corporation,	poration, Knoxville, TN
	1				D		

Systems Engineering and Management Corporation, Knoxville, TN